

5 GEORGE V.

SESSIONAL PAPER No. 21

A. 1915

# FORTY-SEVENTH ANNUAL REPORT

OF THE

# DEPARTMENT OF MARINE AND FISHERIES

For the Fiscal Year

1913-14

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## MARINE

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OTTAWA

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EXCELLENT MAJESTY

1915

[No. 21—1915.]







*To His Royal Highness, Field Marshal Prince Arthur William Patrick Albert,  
Duke of Connaught and Strathearn, K.G., K.T., K.P., etc., etc., etc., Governor  
General and Commander-in-Chief of the Dominion of Canada.*

MAY IT PLEASE YOUR ROYAL HIGHNESS:

I have the honour to submit herewith, for the information of Your Royal Highness and the Parliament of Canada, the Forty-Seventh Annual Report of the Department of Marine and Fisheries, Marine Branch.

I have the honour to be,

Your Royal Highness's most obedient servant,

J. D. HAZEN,

*Minister of Marine and Fisheries.*

DEPARTMENT OF MARINE AND FISHERIES,

OTTAWA, November, 1914.







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## REPORT

OF THE

## DEPUTY MINISTER OF MARINE AND FISHERIES

To the Honourable J. D. HAZEN,  
Minister of Marine and Fisheries.

SIR,—I have the honour to report on the transactions and service of the Marine Branch of the Department of Marine and Fisheries for the fiscal year ending March 31, 1914.

This report contains the annual reports in detail of the officials in charge of separate branches of the Marine Branch and of the outside service under control of harbour commissioners, port wardens and pilotage authorities. The reports of the harbour commissioners, port wardens, and pilotage authorities are for the calendar year 1913, according to the Acts providing for annual reports upon action in each branch.

The season, generally speaking, was favourable for the construction of lighthouses, fog-alarms, and depots. The work in the St. Lawrence ship channel was carried on with success. Nothing of an unusual character interfered with the maintenance of aids to navigation, excepting in some minor instances. Progress was made in the special work of more powerful lighting apparatus at some of the light stations.

Navigation in the St. Lawrence river was possible to a later period in the fall than usual. The ice, however, became very thick during the month of February, and formed heavy jams or "bridges" at several points. The *Montcalm* and *Lady Grey* were employed in attempting to cut channels at these narrow places, and would have succeeded as in former winters, but accidents occurred to both steamers which prevented their continuance in the work until repairs had been made. Navigation was somewhat later in consequence in opening in the spring.

At the head of lake navigation in the harbours of Port Arthur and Fort William, icebreaking was performed under contract, as in former years, enabling grain vessels to enter and move to the elevators and to depart in the spring without interference from ice. A change was made by the appointment of a sub-agent for the Thunder Bay district, with headquarters at Port Arthur.

In the Maritime Provinces, the harbours that generally close during winter were open later in the fall than usual, but navigation opened somewhat later in the spring of 1914 than the average time. This delayed the work of placing buoys in a number of harbours and in some outside channels. Navigation, as customary, was carried on all winter in harbours open all the year round.

In British Columbia, the general service in maintaining aids to navigation was satisfactorily performed; the establishment of the Marine depot at Prince Rupert aided greatly in carrying out the work.



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The winter communication between Prince Edward Island and Pictou was kept up by the steamers *Earl Grey* and *Minto*, with the exception of short periods. The small iceboats from the stations at cape Tormentine, N.B., and cape Traverse, P.E.I., performed satisfactory service when the steamers were prevented from making regular trips.

During the year, several harbours were proclaimed, and harbour masters appointed. In 1912, lines were drawn in certain harbours beyond which wharves must not be built, and similar headlines were defined in certain harbours in 1913.

Amendments were made to regulations governing steamboat inspection, masters and mates, and harbour masters.

Leases of water lots in certain public harbours were granted for the purpose of building wharves; authority was also given to the Montreal Harbour Commissioners to build additional wharves.

The pilotage systems of Montreal and Quebec were investigated.

The large part of the work under the immediate supervision of the permanent agents and sub-agents was, as usual, carried out under that system by authority from Ottawa.

The total expenditure of the Marine Branch for the fiscal year amounted to \$5,560,030.21, but to this was added, as customary, the expenditure for Civil Service salaries of the Marine and Fisheries branches and contingencies, total \$5,828,027.37. The statement of the accountant, which forms one of the appendices of this report, contains the amounts of the appropriation of Parliament, the amounts expended for each division of the departmental service, and the unexpended balances. The total expenditure for Marine and Fisheries together amounted to \$6,898,885.31, not including the fishing bounty of \$158,661.25, which is not a parliamentary appropriation. The net revenue of the Marine and Fisheries branches amounted to \$356,965.80.

The subdivisions and branches of service under which the whole work of the Marine Branch was carried out are as follows:—

The construction of lighthouses and fog-alarms by the Engineer's Branch.

The maintenance of lights, gas buoys and other buoys by the Commissioner of Lights' Branch.

The Lighthouse Board, which decides the necessity for aids to navigation.

The ship channel, St. Lawrence river, and Sorel works.

Meteorological and magnetic service.

Investigations into wrecks.

Wrecks and casualties.

Board of steamboat inspection.

Cattle shipments inspection.

Marine hospitals.

Submarine signals.

Shipping under the Merchants' Shipping Act.

Legislation and administration of laws relating to the Department of Marine and Fisheries.

Humane service in connection with seamen and life saving stations.

Wrecking plant subsidized.

Winter communication.



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Removal of obstructions to navigation.

Examination of masters and mates, and issuing certificates.

Pilotage.

Government of ports and proclaiming of harbours in the Dominion.

Control of harbours and Government wharves.

Dominion steamers, Marine Branch.

Port Wardens.

Wreck Receivers.

Harbour Commissioners.

## LIGHTHOUSE CONSTRUCTION, IMPROVEMENTS AND REPAIRS.

The construction of lighthouses, fog-alarm buildings, towers, boat-houses, life-saving stations, protection work, and repairs to lighthouses in general, engaged the attention of the Engineer's Branch of the Department.

New lights and aids to navigation established, changes and improvements and repairs at existing stations and lighthouse and buoy depots are detailed in the report of the Chief Engineer, appendix No. 1 to this report. Extensive improvements were made at a number of stations, and minor improvements and repairs at others.

In Nova Scotia, the principal new establishments were two new stations with buildings, one pole light, one diaphone fog-alarm building, dwelling and outbuildings. Extensive improvements, including an illuminating apparatus, new buildings and fog-alarms, were made at twenty-five existing stations, and a new lightship placed near Halifax. In New Brunswick, five new stations were established, building erected, one pole light and a concrete wharf built at new depot in St. John. Extensive improvements in lighting apparatus, erection of new buildings, installation of electric lights and plants, erections of skeleton steel towers, sheds, and a diaphone fog-alarm and buildings, were made at nine existing stations, and Lurcher Shoal lightship repaired. Minor repairs were made at several stations. In Prince Edward Island, the new aids are two wooden lighthouse towers, one dwelling; the improvements consisted of rebuilding two lighthouse towers and minor repairs at several stations.

In the Quebec district, the new aids are four steel skeleton towers, three concrete towers, one fog-alarm building, and installation of two diaphones, two dwellings, one outbuilding, one shed, and one boat-house. The changes and improvements consisted of more powerful apparatus at eleven stations, construction of three dwellings, one pole light, one concrete wharf, two fog-alarm buildings, one diaphone, and five sheds, at existing stations. The cruiser *Arctic* was equipped with lighting apparatus and placed as a light ship in the Lower Traverse, St. Lawrence river. Minor repairs were also made at a number of stations.

In the Montreal district, the new aids established are five steel skeleton towers, two wooden towers, one pole light, and one float light. The changes and improvements consisted of one electric light plant, twenty-one pole lights improved, improvements of illuminating apparatus at seven stations, and one skeleton steel tower erected, at existing stations. Minor repairs were also carried out at a number of lighthouses.

In Ontario and Northwest provinces, the new aids are three steel skeleton towers, one concrete tower, two wooden towers, two dwellings, one boat-house, seven pole



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lights, one diaphone fog-alarm, and one shed. Changes and improvements of the illuminating apparatus were made at sixteen old stations; three sheds, three boat-houses, two wooden towers, and one pole light and two dwellings were added. Three electric lights and one diaphone were installed. Extensive enlargement of the Prescott lighthouse depot was completed by removal of old buildings and overhauling of the main building and machinery, and other improvements. Minor repairs were made at Parry Sound depot, and at a large number of lightstations.

In the province of British Columbia, the work consisted of improvements and changes at existing stations; one combined lighthouse and dwelling, one combined lighthouse and fog-alarm building, two concrete towers, one steel skeleton tower, two wooden towers, three dwellings, and one fog-alarm building and three boat-houses and two sheds were built; four acetylene beacons and one electric light beacon and one beacon with oil lantern were erected. One diaphone fog-alarm, one submarine bell were added at existing stations, and illuminating apparatus improved at five stations. Minor repairs were made at a number of stations. Improvements were made at Prince Rupert lighthouse and buoy depot, and preliminary steps taken to establish a buoy and lighthouse depot at Victoria. Minor repairs were made at a number of stations.

The selection and purchase of twenty-four sites for new lightstations throughout the Dominion were completed during the year.

The work done for the Meteorological Service was the erection of storm signal masts at Sydney and North Sydney, Cape Breton, and for the Life-saving Service, a combined boat-house and dwelling built at Ucluelet, B.C., and a lookout steel skeleton tower at Toronto.

Notices to mariners were issued apprising them of new aids to navigation established, changes in lights and buoys, and of obstructions to navigation. The notices were sent to various ports where masters could obtain them at the custom-houses. In addition, information was published in these notices respecting changes in aids to navigation in waters contiguous to Canadian coast waters. The details and cost of all outside work performed in the Engineer's Branch will be found in the report of the Chief Engineer, Appendix No. 1 to this report.

#### REMOVAL OF OBSTRUCTIONS TO NAVIGATION.

Removal of obstructions to navigation was performed under directions of the Engineer's Branch. The wrecks *Douglas* and *Monguagon*, sunk in the Detroit river, near Windsor, were removed by contract. Lights were placed on the steamer *City of London*, wrecked in lake Erie, near Amherstburg. The tug *Maxwell*, left in a sinking condition in Port Stanley, was prevented from being a menace to navigation. Two sunken dump scows and the hulk of the old wheel-steamer *William*, were removed from the channel at Valleyfield, Que.

#### LIGHTHOUSE SUPPLY SERVICE.

Lighthouse supplies, consisting of illuminating oil, paints, etc., were delivered by the Dominion steamers in each agency. The superintendents of lights prepared lists of quantities and supervised the delivery of the articles at each lighthouse on the east



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and west coasts and Great Lakes. The Superintendent of Lights for Ontario has his headquarters in Ottawa, and the steamer *Simcoe* was employed in carrying supplies to lights on the Great Lakes.

## BUOYS, LIGHTSTATIONS, AND SUBMARINE BELLS.

The annual report of the Commissioner of Lights and Buoys furnishes detailed information respecting the number of the several orders of lights, fog-alarm stations, warning buoys, submarine bells, gas buoys, the names of lightstations and number of lightkeepers. These items, together with buoys and beacons established during the year, and the number of unlighted buoys, bushes and stakes maintained in the districts throughout the Dominion, are given.

By comparison with the aids to navigation in operation during 1912-13, it will be seen that a gain of one first order of lights, three third order, four fifth order, twelve sixth order lights, was made. Sixty-eight more lights were in use and twenty more light-keepers were employed, nine more diaphones, twenty more gas, one more whistling, eleven more bell buoys, and three more submarine bells were in operation during the past fiscal year.

The annual report of the Commissioner of Lights and Buoys forms Appendix No. 2 to this report.

## ST. LAWRENCE RIVER SHIP CHANNEL.

The ship channel of the river St. Lawrence, between Montreal and Father point, has a total length of 340 statute miles.

The contracted part of the river begins at the Traverse, 220 miles below Montreal, and between these two points the dredging has been done, where necessary, for deep-draught vessels, and the deepened channel is termed the "ship channel." Work has also been done in a channel extending from Repentigny to Lavaltrie, some miles below Montreal, for light-draught vessels.

The annual report of the Superintending Engineer contains details of the work done in the channel, termed the "30-foot channel," and in the later project of deepening the ship channel to 35 feet, low water. The deepening work to 35 feet was begun in the North channel below Quebec, and the progress made to the end of the season 1913 has been reported by the Superintending Engineer.

The 30-foot channel, completed from Montreal to the upper end of Cap-à-la-Roche, is  $107\frac{1}{2}$  miles, 450 feet in width in straight parts, and 550 to 750 feet in width at the bends. Slow progress was made at Cap-à-la-Roche in deepening and widening the curve, owing to the hard nature of rock dredged. The total length of the dredging work in the 30-foot channel, at various places in the channel, up to the end of 1913, was 66.20 statute miles, being 61.55 miles between Montreal and Quebec, and 4.65 miles below Quebec. A channel 800 feet wide and 30 feet deep, leading to the Montreal floating dock, is nearly completed. Cap Charles channel is also nearly completed and, when finished, will give a width of 450 feet in the straight parts and 600 feet in the curves. Some progress was made in Horseback bar channel in the work of deepening it from  $27\frac{1}{2}$  feet to 30 feet at low water, and widening it from 300 to 450 feet.



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The distance dredged to a depth of 35 feet in the channel during the year was 3.90 miles, making the whole distance of that depth, 16.32 miles, and leaving the distance yet to be dredged to 35 feet, 74.06 miles.

The number of cubic yards dredged everywhere in the channel during the year, was 6,140,867, at a cost of \$895,235.59. In the interesting historical sketch in the report of the Superintendent, it is shown that the total dredging from 1851 to the end of 1913 amounted to 91,301,742 cubic yards, and the cost for dredging alone was \$10,505,495; for plant, the cost amounted to \$6,433,651.66, total \$16,939,146.82.

The dredging fleet consists of thirteen dredges, nineteen tugs, thirty-one scows, six barges, two stone lifters, one rock cutter, and one floating shop.

During the season, the usual sweeping of the channel was done, and no obstruction of a serious nature was found.

The Cap-à-la-Roche semaphore at Deschaillons, which indicated the depth of water in the dredged channel at Cap-à-la-Roche, was put in operation on April 26, and the St. Nicholas semaphore, showing the depth of water over the undredged bar at St. Augustin, on May 3.

One serious accident to shipping occurred, caused by the collision of the steamers *Lady of Gaspé* and *Crown of Cordova*, and seven minor accidents.

Icebreaking was performed by the *Lady Grey* and *Montcalm*, but accidents happened to the two steamers: the *Montcalm* lost her rudder and the *Lady Grey* lost a propeller blade. Repairs were made to the latter steamer, which completed the work of icebreaking in the latter part of April.

The marine telegraph signal service begun on the 1st of September, 1907, now consists of thirteen stations between Montreal and Crane island, 32 miles below the city of Quebec. These stations are connected by private telephone system, between Montreal and Quebec, and between that city and Crane island, with the Bell Telephone system. By this means the condition of the weather and the movements of vessels can be ascertained at each station, and reported.

The International Code of Signals is used to communicate with vessels.

The report of the Superintendent of the Ship Channel forms appendix No. 3.

### SOREL SHIPYARD.

All vessels of different kinds belonging to the St. Lawrence River ship channel, a number of vessels attached to the lighthouse service of the Marine Branch, and a number of vessels belonging to the Public Works Department were repaired. Some of the repairs were extensive, requiring the steamers, tugs, barges, and scows to be hauled out. Seven steamers received a general overhaul during winter months, thirteen dredges were repaired, fourteen tugs, three sounding barges, fourteen dumping scows, and five coal barges received important and minor repairs, caulking and painting.

Construction of vessels laid down in 1912 continued, and building of other vessels of different kinds was begun. During the year, construction work on the following vessels was carried on, viz., two steamers, two tugs, one stone lifter, three barges, one gasoline launch, fourteen scows, and two catamarans. The two catamarans are to be used in connection with taking levels in the St. Lawrence river.



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Repairs to shipyard buildings, sheds, plant (including outside and workshop machinery and hoisting gear) formed part of the work of the year. New machinery was installed, and extensions made to buildings and wharves. All of the details of repairs, construction and purchase of material will be found in the report of the Superintendent of the Sorel shipyard, forming Appendix No. 4 of this report. A statement of expenditure is attached, amounting to \$1,466,591.40 total expenditure.

## DOMINION STEAMERS.

## NOVA SCOTIA DISTRICT.

*Montmagny.*

The *Montmagny* is a screw steel vessel, built in Sorel, Que., in 1909, is 212.6 feet long, 34.4 feet wide, 19.5 feet deep; 723 net, 1,296 gross tonnage.

The *Montmagny* was engaged during the month of April in placing buoys on the eastern and western coasts of Nova Scotia, carrying supplies to various lightstations, and placing Prince Edward Island buoys in position. She sailed to Quebec in May, and returned to Nova Scotia waters in December, where she was engaged in buoy and supply work until the month of April, when she again returned to Quebec.

*Stanley.*

The *Stanley* is a single-screw steel vessel, built in Govan, G.B., in 1888, specially for winter navigation in the strait of Northumberland. She is 207.8 feet long, 32.0 feet wide, 17.9 feet deep; 394 net, 914 gross tonnage, and 300 nominal horse-power.

She arrived from St. John, N.B., in May, was engaged in buoy work and carrying supplies to lightstations until the first of January. She rendered valuable service in icebreaking on the Cape Breton coast, and made two trips to Magdalen islands with mails and supplies.

*Lady Laurier.*

The *Lady Laurier* is a twin-screw steel vessel, 214.9 feet long, 34.2 feet wide, 17.2 feet deep; 413 net, 1,051 gross tonnage, and 186 nominal horse-power. She was built in Paisley, Scotland, in 1902, and is employed in the lighthouse and buoy service of this department under the control of Nova Scotia Agency.

The *Lady Laurier* was engaged during the year in carrying supplies to several lightstations, lifting and placing large automatic buoys, and made two trips with mails and supplies to Sable island. She rendered valuable assistance to the wrecked steamer *Cobequid* in January, 1914.

## NEW BRUNSWICK DISTRICT.

*Aberdeen.*

The *Aberdeen* is a single-screw steel vessel, built in Paisley, Scotland, in 1894, and is 180 feet long, 31.1 feet wide, 16.9 feet deep; 266 net, 671 gross tonnage, and 200 nominal horse-power.



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She was employed in the lighthouse and buoy service, mostly under the New Brunswick Agency.

She was at Halifax at the beginning of the fiscal year, undergoing repairs until the 1st of May, 1913. She then placed several buoys in Nova Scotia waters, and on the 4th sailed for St. John, N.B., where she remained until the 10th. This vessel then inspected Old Proprietor buoy, left with Mr. Kelly, Superintendent of Lights, on board to inspect the *Lurcher* lightship. She was then engaged delivering supplies and performing general buoy work during the month of May.

On the 2nd of June, Captain Dalton, Chief Engineer Meredith, and Second Officer Kenny joined the ship, and Captain Blois and crew left for Halifax. The vessel remained at St. John until the 24th of June, when she sailed for Grindstone island to land supplies. She placed Sisters Rock buoy, landed 225 cases of oil at Cape Spencer, returned to Carleton, where she remained until the 4th of July.

On the 8th, the mud scow in tow of the tug *Muscallonge* collided with the *Aberdeen*, injuring her rail, and she returned to St. John, with cement. She continued the buoy service in those waters until the 6th of August, when she was laid up at Carleton for minor repairs until the 16th. The steamer then resumed work on the 14th of October. The *Aberdeen* sailed to rescue a crew, reported in distress off Gannet rock, but learned that a lifeboat had rescued them. The dismasted schooner was towed to Seal cove in a heavy gale. On the 14th of November, the *Aberdeen* sailed from Digby, N.S., to Bay View life-saving station with Commander Thompson, who also visited Little Wood island and Welchpool, and returned to St. John.

From the 18th of December, 1913, until the 22nd of January, 1914, she was laid up at St. John for repairs, and for the balance of the year was on regular service.

#### *Lansdowne.*

The *Lansdowne* is a wooden steamer built at Maccan, N.S., in 1884. She is 188.6 feet long, 32.1 feet wide, 15.8 feet deep; 463 net, 680 gross tonnage, and 80 nominal horse-power.

This steamer is engaged in the lighthouse and buoy service under the directions of the New Brunswick Agency.

At the beginning of the fiscal year she was at St. John, N.B., and sailed on the 4th to Westport, N.S., with Commander Thompson, to inspect the life-saving station. The *Lansdowne* continued the regular buoy service, and on the 31st of May went to the relief of the steamer *General Turnbull*. From this date until the 13th of January, 1914, she was constantly employed at her regular work, and on that date sailed to Brier island, to render aid to the *Cobequid*, which was reported to be stranded there. She sailed to Gull rock in very rough weather. Finding no trace of the *Cobequid*, the *Lansdowne* sailed to Westport, Brier island, N.S., for information; and learning that the wreck was on Trinity ledge directed her course thither, arrived at 5.40 p.m., anchored close to the wreck; the sea was too rough to render assistance to the fifteen persons still on board the *Cobequid*. At 7.15 next morning, a boat in charge of First Officer McLean succeeded in taking all on board the *Lansdowne*, which sailed at once for St. John and landed them. She began and continued her regular work until the 29th, when she was laid up at St. John to have her stern repaired that had been



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damaged by the ss. *Manchester Corporation*. On the 9th of February, she resumed work until the 24th, then she sailed for points on the St. Croix river, with representatives of the shipping interests, Mr. Goodspeed, District Engineer of the Department of Public Works, Mr. Kelly, Inspector of Lights, and Mr. Swan. She returned to St. John the following day, and continued work until the close of the fiscal year.

## PRINCE EDWARD ISLAND DISTRICT.

*Earl Grey.*

The *Earl Grey* is a steel icebreaking passenger and freight steamer built by Vickers, Sons & Maxim, Barrow-in-Furness, G.B., for winter navigation in the strait of Northumberland to keep up steam communication between Prince Edward Island and the mainland. She is 250 feet long, 47.7 feet wide, and 24.1 feet deep; 2,357 tons gross, 930 net, and her displacement is 3,340 tons. She is fitted with wireless telegraph apparatus and is classed 100 A.1 at Lloyds.

The *Earl Grey* was on the Charlottetown-Pictou route, making regular trips from April 1 to 8. She sailed on the 14th for the Magdalen Islands, having the inspector of fisheries on board, was delayed at Georgetown for some time by fog, and arrived at Grindstone island, M.I., on the 16th; went to Pictou on the 18th.

She returned on the 20th of May; was in the employ of the Charlottetown Steam Navigation Company from that date until the 24th. Sailed to Halifax on the 26th, left for Sydney on the 31st, and on the 3rd of June left for Quebec, where she lay until the 6th of July. Sailed for Charlottetown, arriving there on the 8th, with military men on board. She again sailed to Quebec on the 2nd of July, where she remained until the 24th of July, when she sailed for Charlottetown.

She remained at the Marine wharf from August 3 to December 2, during which time she had repairs made to machinery, doors, lights, ventilators, tanks, funnel, ash ejector, and decks. After fitting for winter service at Charlottetown she was placed on the Charlottetown-Pictou route on the 29th December, and continued on that route until the close of the fiscal year.

The *Earl Grey* was detained by ice while returning from Amet island on the 2nd of February, and again by ice on the 20th and 21st March.

The *Earl Grey* made eighty-seven single trips during the winter season across the strait, carried 342,802 pounds expressage, 10,776,525 pounds freight, 2,057 first-class passengers, 220 of whom paid half-fare; 1,023 second-class passengers, provided 2,226 meals and 1,136 berths.

## Earnings—

From expressage.. . . .	\$ 685 72
“ freight.. . . .	8,269 38
“ passengers.. . . .	3,943 50
“ meals.. . . .	222 60
“ berths .. . . .	1,136 00
“ four days' hire to Charlottetown S. N. Co.. . . .	700 00
“ berths to Magdalen island .. . . .	5 00
Total.. . . .	<u>\$14,962 20</u>

Meals are furnished by the steward, who pays the ship 10 cents per meal.



Minto.

The *Minto* is a single-screw steel vessel, built in Dundee, G.B., specially for winter navigation in the Northumberland strait, between Prince Edward Island and the mainland. She is 225 feet long, 32.7 feet wide, 18.3 feet deep; 372 net, 1,090 gross tonnage; 216 nominal and 2,900 indicated horse-power.

The *Minto* was at Summerside on April 1, left for Charlottetown that day, and plied on the Pictou-Charlottetown route until the 9th; lay at Charlottetown from the 6th to the 10th; was in the employ of the Charlottetown Steam Navigation Company on the 17th and 19th April, and was at Charlottetown from the 20th to the 24th, when she left for Pictou. She returned to Charlottetown on the 6th of May, and lay at the Marine wharf for repairs to machinery and hull. This completed, she sailed for Pictou on the 26th November, returning to Charlottetown on the 2nd of December, sailed to Summerside the following day, and began the winter service between that town and Cape Tormentine on the 27th, making round trips daily until the 10th of January, 1914. She sailed for Charlottetown on the 16th January, crossed to Pictou on the 17th, was forced to return to Georgetown on the 20th, and made regular trips on that route until the 12th of February, when she was fast in heavy ice on way to Pictou, was released by *Earl Grey* on the 14th, and reached Pictou on the 15th. She was again stuck in ice on the 21st February, and made regular trips on the Georgetown-Pictou route until the close of the fiscal year.

The *Minto* made eighty-eight single trips across the strait during the winter season, carried 274,334 pounds expressage, 4,701,045 pounds freight; carried 1,858 first-class passengers, 131 of whom paid one-half fare; 554 second-class passengers, five of whom paid one-half fare—making a total of 2,412 passengers; provided 1,709 meals and 527 berths to passengers.

Earnings—		
From	expressage.. . . .	\$ 549 78
"	freight.. . . .	3,598 55
"	passengers.. . . .	2,683 75
"	meals.. . . .	170 90
"	berths .. . . .	527 00
"	Charlottetown S. N. Co.. . . .	262 50
Total.. . . .		<hr/> \$7,792 48 <hr/>

Brant.

The *Brant* is a wooden vessel built in Charlottetown, P.E.I., in 1898. She is 100.4 feet long, 19.1 feet wide, 9.5 feet deep; 58 net, 142 gross tonnage, and 33 horse-power.

This vessel was employed in the lighthouse and buoy service during the year 1913. After fitting out at the Marine wharf, Charlottetown, she sailed on the 14th April, having on board St. Peter's Spit and other buoys, placed them in position, returned the following day and remained at the wharf until the 20th, undergoing cleaning and painting. She continued placing buoys until the 12th May, when she began carrying lighthouse supplies and repair materials; and continued this service until the 11th of November, when she began lifting buoys; and laid up for winter on January 1, 1914.



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## QUEBEC DISTRICT.

*Rouville.*

The *Rouville* is a screw steamer, built in the Government shipyard, Sorel, in 1906; is 125 feet long, 26 feet wide, 14.2 feet deep; 301 gross, 144 net tonnage, and 54 horse-power.

She is employed in the lighthouse construction service under the direction of the Quebec Agency, and wintered in the Louise basin, where she was repaired and fitted for the season's operations. On the 13th of April, she was sent to Lower Traverse to replace the lightship, and continued as lightship until the 20th. On the 9th of May the *Rouville* sailed for Murray Bay to replace the *Champlain* on the ferry service, and remained until the 25th of June, when she resumed carrying construction material, which was continued until the 6th of November, when she again entered on the ferry route between Murray Bay and Rivière Ouelle, and continued until the 1st of December, the close of the season's work.

*Montcalm.*

The *Montcalm* is a powerful icebreaker, specially designed for the St. Lawrence river service. She was built at Yokers, G.B., in 1904, is a twin-screw steel vessel, 245 feet long, 40.6 feet wide, and 15.7 feet deep; 526 net, 1,432 gross tonnage, 406 nominal and 4,250 indicated horse-power.

At the beginning of the fiscal year she was at Portneuf, and left for Quebec for coal; on the 2nd sailed to Three Rivers to assist the *Lady Grey* in clearing the ice-jams, and worked there until the 13th, when she returned to Quebec to coal and fit up for duty in the gulf in connection with the reporting of ice conditions to incoming vessels. She sailed on the 20th, cruised north of cape Ray to St. Paul island, returned to Father point on the 29th, sailed up the Saguenay on the 30th, and returned to Quebec, reporting the gulf and river clear of ice. The *Montcalm* remained at Kings wharf until 22nd of May, when she went into Levis dry dock for repairs, where she remained until the 12th of June, when she returned to Kings wharf. The ship being thoroughly repaired, cleaned, scraped, painted, and holds put in a good state of repair, she left Kings wharf on the 10th of July, proceeded to Louise basin and began loading supplies, and on the 16th left for the lower St. Lawrence. She worked in the river and gulf until the 12th of August, returned to Quebec, took in supplies and left on the 17th, sailed up the Saguenay river, returned and remained at Kings wharf until the 31st of August, when she sailed for St. Croix to charge and place buoy in position, returned to Quebec, worked around this locality until the 7th of September, sailed from Quebec to Chaleur bay, calling at many points en route, reached Dalhousie, N.B., on the 20th September, returned and landed supplies at Capé Magdalen on the 21st, and reached Quebec on the 22nd. She remained at Quebec until October 4, coaling and taking on lighthouse supplies sailed for Lower Traverse, placed black buoy in position, returned to Quebec, was replaced temporarily by the *Montmagny* on the 11th and, after taking on supplies, sailed for the lower part of the gulf on the 16th October. When returning she received orders at Pointe des Monts, on the 9th of November, to cruise along the north side of Anticosti island in search of ss. *Bridgeport*;



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she returned to Quebec on the 14th of November. The *Montcalm* then left to render aid to a steamer in the Saguenay river, continued work in the St. Lawrence river until the 19th of December, when she moored at Pointe-à-Carcy wharf to undergo repairs, and remained there until the 13th of January, 1914, when she received orders to begin icebreaking. She continued, at intervals, to clear ice in the river until the 2nd of February, when she sailed for Anticosti with passengers, mail, and freight, encountered very heavy ice in which she was several times stopped, and returned to Quebec on the 11th. She continued to relieve ice-jams at the "Bridge" and cap Rouge until the 28th of February, when she sailed to Portneuf to break the ice-jams, worked on the jam until she broke the hand steering gear and rudder-chains on the 6th of March; returned to Quebec for coal and repairs, returned to Portneuf, worked at jam until the 13th, when rudder broke and ship returned to Quebec, moored in Louise basin for repairs, where she remained until the close of the fiscal year.

#### *Champlain.*

The *Champlain* is a screw, steel vessel, built in Paisley, Scotland, in 1904; is 120 feet long, 30.3 feet wide, and 17.6 feet deep; 225 net, 522 gross tonnage, and 87 nominal horse-power.

This icebreaker is under the command of Captain René Pelletier, carries a crew of 26 men in winter, is employed the year round in the ferry service between Murray Bay, St. Irénée and Cap-à-l'Aigle on the north shore of the St. Lawrence river, and Rivière Ouelle wharf on the south shore, which is connected by a branch line of railway 6 miles long to the main line of the Intercolonial railway and Rivière Ouelle Junction, where the river is about 11 miles wide.

Beginning on the 23rd of June, she made two round trips daily until the 13th of September, except Sundays, when she made one round trip. At other dates she made only one round trip daily except Sundays, making in all 331 round trips.

She failed to cross on October 15, December 24, was compelled to leave her station on December 28 and came up to Quebec for shelter from storm, snow, and moving ice, the former berth at Murray Bay having been filled up to enlarge the wharf. She returned on the 20th of March and resumed work three days later.

She transported 8,365 passengers, 5,441 sacks of mail, a very large quantity of freight, served 503 meals to passengers and earned \$6,635.58.

The *Champlain* was withdrawn from the service and came up to Quebec for general repairs on May 12, and resumed her former work on June 2. She again came up to Quebec for general overhauling preparatory for winter service on November 6. and returned to her station on December 2, the *Rouville*, on both occasions, taking her place while laid up for repairs.

#### *Eureka.*

The *Eureka* is a single-screw, steel vessel built in Glasgow, Scotland, in 1893, is 98.7 feet long, 22.0 feet wide, 11.0 feet deep; 170 gross, 19 net tonnage, and 60 horse-power.

She continued in the pilotage service from Platon to Father point during the season of navigation. She left Quebec for Father point on the 20th of April, and left the station on December 10.



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During this period she sailed 6,165 miles, boarded 751 steamers inward bound, 684 outward, 20 yachts inward, 18 outward, 6 barques inward and 6 outward—a total of 1,435 steamers, 38 yachts and 12 barques—a grand total of 1,485 vessels of all kinds boarded inwards and outwards.

*Druid.*

The *Druid* is a single-screw steel vessel, built in Paisley, Scotland, in 1902, is 160 feet long, 30.1 feet wide, 12.5 feet deep; 149 net, 503 gross tonnage, and 59 horse-power.

She is employed in the lighthouse and buoy service under the control of the Quebec Agency. She was at Quebec until the 5th of April, 1913, and on the 6th sailed towards Kamouraska lighthouse, Brandy Pots, Red Islet lightship, dragged for anchor without success and, after placing several buoys in position, returned to Quebec on the 12th and continued to perform lighthouse and buoy work until the 4th of October, when she went into Lévis dry dock for repairs, where she remained until October 18, when she resumed her ordinary work until the close of the season of navigation.

## BRITISH COLUMBIA DISTRICT.

*Estevan.*

The *Estevan* is a twin-screw steel vessel, built in Collingwood, Ont., in 1912, and is 212 feet long, 38 feet wide, 15.3 feet deep; 1,161.42 gross, 606.61 net tonnage, has 174 horse-power, and a speed of 12 knots an hour.

At the beginning of the fiscal year, she was at the Wallace shipyard undergoing repairs, left the yard on the 23rd May, proceeded to Seattle, U.S., on the 27th, sailed north to Askew and Triple islands to establish acetylene beacons, charged gas buoys in Queen Charlotte sound and other northern waters, landed supplies and building material. After conveying the Minister of Marine and Fisheries and party from Prince Rupert and back, she returned to Victoria on September 10. From the 17th of September until the 2nd of January, 1914, she was on the west coast delivering supplies, lifting and overhauling buoys, and conveying workmen.

On the 2nd of January, she conveyed the superintendent of lights on an inspection trip to the west coast, delivered a new motor life-boat at Ucluelet and a life-boat at Clayoquot, landed the inspector of lights at several stations, delivered supplies, picked up and recharged buoys and, on the 12th of January, left for Vancouver to undergo annual overhaul.

*Quadra.*

The *Quadra* is a screw steel vessel, built in Paisley, Scotland, in 1891. She is 174.5 feet long, 31.1 feet wide, 13.6 feet deep; 265 net, 573 gross tonnage, and 120 nominal horse-power.

She is in the lighthouse and buoy service, and at the beginning of the fiscal year was under the direction of the resident engineer, laying out new work at Rose Spit, Separation Point, Masset, and cape St. James. She landed stores at Langara lighthouse, placed a gas buoy at Dead Tree point, shifted Lawn Hill buoy to new position, transferred beacon from Kola point to Danger rock, and recharged gas buoys in vicinity of Prince Rupert. She proceeded to Channel rocks and placed a large gas



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buoy there, and from the 2nd to the 24th of June was landing annual supplies at the Gulf stations, after which she was laid up for repairs until the 4th of August, when she began recharging the automatic lights in the gulf of Georgia, and continued the buoy service there until the 26th of August, when she left for the north, took aboard the commander of the marine service at Prince Rupert for an inspection trip to Queen Charlotte islands to choose a site for a life-saving station. A lightkeeper and supplies were landed at Langara island, and materials at Massett light.

From October 21 until November 10, she was occupied in shipping, painting, and overhauling buoys from Queen Charlotte sound to Victoria, then proceeded to northern waters to refill acetylene beacons and buoys from Alaska to Queen Charlotte sound, carried workmen to cape St. James to complete tower, erect lantern, and instal apparatus and keeper, and returned to Victoria.

She left Victoria on the 7th of March, replaced Colburne passage buoys, landed supplies at Ballenas, and continued operations in those waters until the close of the fiscal year.

#### *Leebro.*

The *Leebro* is a wooden steam vessel, built at Victoria, B.C., in 1908, and is 123.5 feet long, 28.8 feet wide, 11.1 feet deep; 198 net, 324 gross tonnage, and 23 horsepower.

She was chartered by the department from the Crescent Shipping Company, Limited, of Victoria, B.C., during the year, and was employed in the lighthouse and buoy service under the control of British Columbia Agency.

On the 2nd of April, she began to remoor Sand Heads lightship, recharge gas buoys, which she continued until the 15th, when she was employed in painting moorings of Active Pass bell buoy, painting Snake Island buoy, overhauling buoys in Vancouver harbour until the 30th, when she sailed to the west coast with coal oil and other lighthouse supplies. She continued under the charge of the inspector of lights until the 5th of June, when she went to Vancouver, attended to buoys, and left for the west coast with construction materials and men on the 19th of June, continued work there until the 3rd of September, when she sailed to cape St. James and the wireless stations at Pachena, Estevan, and Triangle island with supplies.

On the 19th of November, she landed machinery at Discovery island, replaced buoys in vicinity of Sidney, and on the 1st of December began to land supplies and private stores for west coast stations, transferred lightkeepers at cape Beal station, and continued landing supplies, building beacons until the 19th of March, when she sailed for Triangle island with wireless supplies and operators; returned to Victoria and was reloading at Victoria at the close of the fiscal year.

#### *Grainer.*

The *Grainer* is a wooden steamer, built in Victoria, B.C., in 1909, and is 100.5 feet long, 33.0 feet wide, 8 feet deep; 88 net, 144 gross tonnage, and 19 horse-power.

She was chartered from the Butler Freighting and Towing Company, of Victoria, B.C.

At the beginning of the fiscal year the *Grainer* was recharging acetylene beacons in the gulf of Georgia. She transferred acetylene beacons from First Narrows,



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Burrard inlet, to Senans island. From the 28th of April to the 4th of July, she carried machinery from Victoria to First Narrows fog-alarm station, and loaded buoys at Active Pass for Victoria, after which she sailed with coal for Lennard island fog-alarm, and replaced crossing buoys in Clayoquot sound.

## MONTREAL DIVISION.

*Dollard.*

The *Dollard* is a twin-screw steel vessel, built in Kingston, Ont., by the Collingwood Shipbuilding Company, Ltd., in 1912, and is 170 feet long, 31.6 feet wide, and 15.6 feet deep. She is furnished with two steel boilers, Scotch type, each of 180 pounds to the square inch pressure, and furnaces fitted to burn coal or oil fuel, two triple expansion engines, the cylinders of which are 12½, 21, and 34 inches diameter, and 21-inch stroke.

She was employed in the light and buoy service under the directions of the Montreal agency of this department during the fiscal year.

*Shamrock.*

The *Shamrock* is a single-screw wooden vessel, built in Quebec in 1894, is 117.3 feet long, 25 feet wide, 9.7 feet deep; 237 gross, 161 net tonnage, and 61 horse-power.

She is employed in the lighthouse and buoy service under the control of Montreal agency.

*Verchères.*

The tug *Verchères* was in the Montreal lighthouse and buoy service during the year.

*Acetylene.*

The *Acetylene* is generally employed attending the gas buoys under the control of Montreal agency.

*Maggie May.*

The *Maggie May* was chartered from Thomas Weir, Esq., of Chute au Blondeau, Que., during the season of navigation in the Ottawa river, where she was employed in the buoy service under the control of Montreal agency.

## ONTARIO DISTRICT.

*Scout.*

The *Scout* is a wooden, single-screw vessel, 103.6 feet long, 25.6 feet wide, 9.2 feet deep; 70 net, 176 gross tonnage, and 27 horse-power.

She is employed in the lighthouse and buoy service in the upper St. Lawrence river.

*Simcoe.*

The *Simcoe* is a steel twin-screw vessel of 217 nominal horse-power, built by Swan, Hunter & Wingham, Richardson, Ltd., Newcastle-on-Tyne, G.B., in 1909, and is 180 feet long, 35.2 feet wide, 15.5 feet deep; 913 gross and 438 net tonnage.



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She is employed in the lighthouse and buoy service on the Great Lakes and Georgian bay.

*Lambton.*

The *Lambton* is a single-screw steel vessel of 89 horse-power, built in Sorel, Que., in 1909. She is 108 feet long, 25.1 feet wide, 12.7 feet deep; 324 gross, 182 net tonnage.

The *Lambton* is in the lighthouse and buoy construction and superintendence service, under the direction of the Chief Engineer's Branch.

From the beginning of the fiscal year until the 13th of May, she was employed by the agent of the department at Parry Sound. While there some repairs had been made to her cabins and other parts.

She was then used in the construction service until the close of navigation, when she was laid up at Parry Sound, where repairs were made to her decks, engine room, machinery, galley, hawse pipes, and boats; and the ship painted and made ready for next season's work.

*Grenville.*

Tenders were invited for the construction of a steamer to take the place of the *Scout* in the buoy service on the Upper St. Lawrence river. A contract was signed by the Polsons Iron Works to build a single-screw steel steamer for the sum of \$173,199, to be delivered at Prescott in 1914.

The leading dimensions of this steamer are to be 164 feet long over all, 155 feet between perpendiculars, 30 feet wide, and 13 feet deep.

The vessel is to be fitted with water ballast tanks and water-tight compartment bulkheads.

The engine to be triple expansion, developing 900 indicated horse-power, and Howden's forced draught system. Scotch tubular boilers are to be used, with a working pressure of 180 pounds to the square inch.

*New Icebreaker.*

Plans and specifications were prepared for an icebreaking steamer for the department. Tenders were invited, and a contract entered into on the 18th of March, 1914, with the Canadian Vickers, Limited, of Montreal, to build a steel twin-screw ice-breaking steamer for the sum of nine hundred and ninety-eight thousand five hundred and eighty-three dollars (\$998,583). This contract includes hull, engines, boilers, and auxiliary machinery.

The leading dimensions will be 292 feet in length over all, 275 feet between perpendiculars, 57 feet 6 inches extreme breadth, 32 feet in depth, and a draught of 19 feet.

The propelling engines will be two sets of triple-expansion surface-condensing engines with working parts 60 to 35 per cent in excess of Lloyds requirements. The boilers to be two double ended and four single ended Scotch boilers, allowing a working pressure of 180 pounds of steam per square inch.



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The hull will be divided by transverse and longitudinal water-tight bulk-heads.

The steamer is to be built under Lloyds special survey and in accordance with the Dominion Steamboat Inspection Act, and is to class 100 A.1 at Lloyds.

The contract is to be completed and vessels delivered at Quebec on or before the 30th of November, 1915. A fuller description of the icebreaker will appear in the annual report after her construction.

It is contemplated to use the steamer in the St. Lawrence river during winter to prevent ice jams, and for winter navigation purposes.

## REPORT OF THE QUEBEC SALVAGE AND WRECKING COMPANY.

The entire plant has been held available for services from the opening to the close of navigation on the St. Lawrence river during the above mentioned period with a complete staff of wreckers and divers. Following operations have been performed:—  
1912.

May 24, ss. *Ultonia* assisted vessel from Quebec to below the traverse.

September 25. Barge *Zapotec* sunk at Bersimis, floated her and brought her to Quebec.

October 6. ss. *Bengore Head* went to assistance and stood by her from Strait of Belle Isle to Quebec.

October 19. Barge *Omaha* towed her off from Bersimis.

October 31. ss. *Bellona* sunk at Lower Traverse, floated her and brought her to Quebec.

November 6. ss. *Royal George* ashore at St. Lawrence point, supplied her with pumps, pulled her off and brought her to Quebec.

November 10. ss. *Gladstone* ashore at St. Lawrence point, supplied her with pumps, pulled her off and brought her to Quebec.

1913.

May 31. ss. *Floriston* sunk at Pointe Platon, supplied her with pumps, lifted her and brought her to Quebec.

June 24. ss. *Cruizer* sunk at St. Catharine's bay, floated her and brought her to Quebec.

July 29. ss. *Lady of Gaspé* sunk off Cap de la Madeleine patched up hole 9 x 20 feet under water, lifted her and brought her to Quebec.

September 16. ss. *Whakatane*. This ship ran into Gilmour's wharf where she landed with her foreship, towed her off and brought her to Quebec.

October 16. ss. *Empress of Ireland* rendered diver's services clearing propellor.

## METEOROLOGICAL SERVICE.

During the past fiscal year, the study of agricultural meteorology under Mr. R. W. Mills, B.S.A., has been inaugurated, and valuable practical results are anticipated.

Reports from 657 stations have been received at the central office—an increase of eighty over last year. The number of persons who received remuneration was 322; of this number thirty-six were at the central office—an increase of eighteen over last year.



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Weather charts were compiled twice a day during the year, based on reports from thirty-nine stations in Canada, 100 from the United States, five from Newfoundland, and one from Bermuda.

Forecasts based on those reports and those of British Columbia were published in bulletin form, posted in conspicuous positions in important centres of commerce, sent by telegraph and telephone lines to nearly all Canadian newspapers; and storm warnings issued to all stations in Canada and four in Newfoundland. of the 2,271 warnings thus issued 95 per cent were verified.

Phenological statistics of a valuable nature have been collected, records of magnetic elements secured without interruption, and careful observations made of declension, horizontal force, and inclination.

Assistance and instruction were given surveyors in the use of the total force instruments; and index corrections for magnets attached to eighty-eight surveyors' theodolites determined. Seventy-one determinations for time, by transit of stars, and eleven solar transits were made, the position of the stars taken from the American Ephemeris and Berliner Jahrbuch and collimation error, of transit instrument determined.

Owing to the increased demand made on the time service, a large magnet clock of four circuits and capable of controlling 120 secondary clock units, and a new mean time clock are being installed in the main building to be used in giving time over telephone and in synchronizing clock systems. Time has been exchanged between Toronto, Montreal, Quebec, and St. John, and a table denoting difference, compiled.

Solar observations were taken on 144 days, spots were seen on fourteen days, and maps made showing the positions of spots.

The total number of earth disturbances recorded by the Milne seismographs at Toronto and Victoria, B.C., was 105 and 98 respectively, the one on February 10 being felt severely in Eastern Canada, New England and New York state.

To facilitate meteorological and seismological research in British Columbia, a small observatory was erected on Gonzales hill, near Victoria, and a meteorological office opened in Vancouver.

Sixty-eight climatological stations have been opened through Canada during the year—twenty-two in British Columbia, nineteen in Alberta, twenty in Ontario, eighteen in Quebec, four in New Brunswick, three in Nova Scotia, and one in Prince Edward Island.

The director of the Quebec observatory reported that regular observations were taken, that instruments were in good order, and air hygograph and self-recording rain gauge installed. Bulletins were regularly issued, posted, published in newspapers, and transmitted to leading centres by telegraph and telephone lines. Standard stars were observed, the correct time given by means of the time ball, the noon gun, and by telephone. Chronometers were rated, barometers compared and adjusted.

The director of the St. John, N.B., observatory reported that all instruments were in good condition, that regular observations have been taken and transmitted, requests for statistical and climatological information answered, weather bulletins daily printed, posted in prominent positions, and copies sent by mail, by telegraph, and by telephone lines. Time observations were taken with the meridian telescope on clear nights,



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results recorded on the chronograph, and errors of the sidereal clocks computed. Wireless time signals were sent by the automatic apparatus at Camperdown, N.S., to navigators within range of that station.

## MONTREAL HARBOUR COMMISSION.

The commission is composed, as last year, of Messrs. W. G. Ross, Farquhar Robertson, and A. E., Labelle, whose report presents in a concise and convenient form the chief features of the past year's operations.

Navigation opened much earlier than in 1912. The first vessels of the Richelieu and Ontario Company's steamers, the *Longueuil* and *Boucherville*, arrived in port on the 10th of April, and the first ocean steamer, the *Sokato*, arrived on the 21st of April.

In accordance with the recommendation of the Public Service Commission, a comptroller's department was organized that has full control and responsibility of all accounting and cost records of every department, the preparation of bills, the certifying of vouchers, time-keeping, and store records.

A harbour police department was organized to work in conjunction with the city police for the better protection of life and property on the water-front.

La Compagnie Generale Transatlantique opened communication between Havre, France, and Montreal; the *La Touraine* making two trips on that route; additional steamers were added to other lines.

In the commissioners' railway traffic department a decrease of 2,000 cars from the previous year was caused by the decrease in the quantity of apples, lumber, and hay shipped; but the business done at the sheds shows an increase of 12 per cent over that of the previous year.

## GRAIN ELEVATORS.

Steps have been taken to increase the capacity of elevator No. 1 from 1,000,000 to 2,500,000 bushels, and the work is nearly completed.

The construction operations, however, were not allowed to interfere with the receiving and shipping of grain, as 15,554,282 bushels were received and delivered during 1913. This, in addition to 20,819,055 bushels received and delivered by elevator No. 2, and 7,459,933 transferred by the six floating elevators kept in commission, make a total of 43,833,270 bushels.

Employed in the conveyance and transfer of this grain were 1,827 cars, 548 steamers, and 638 barges. Of this amount, 43,349,291 bushels were shipped during the year.

Shed No. 16 on Victoria pier was allotted to the "Canada Line," and tracks and roadways were improved.

Two sheds to be known as sheds No. 24 and No. 25 are in course of construction on the end of the market basin.

Shed No. 24 will be 264 feet long and 105 feet wide, and is designed for the use of ocean and coasting vessels not requiring a larger shed. Shed No. 25 will be 484 feet long and 105 feet wide.

At the dry dock, all the reclamation work was completed, the approaches dredged and the quay wall built.



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A new wharf is being built at Pointe-aux-Trembles for the accommodation of the Cement Company and general traffic.

About 8 acres of dredging was done to a depth of 20 feet at L.W., south of St. Helen's island, to allow the flow of water to pass between St. Helen's island and the south shore, and 2 acres dredged to a depth of 10 feet at low water.

One dredge, *No. 6*, 104 by 39 by 10 feet 6 inches at bow; one derrick, *No. 7*, 88 feet by 31 feet by 9 feet 6 inches; one tug, *Passe-Partout*, 50 feet 6 inches by 12 feet by 7 feet 7 inches over all; and three scows were added to the plant during 1913.

The wharves, roads, lamps on wharves, and channels were kept in efficient repair.

The floating crane was in operation 127 days, making 422 lifts weighing 6,771½ tons.

The extent of wharves owned and operated by the harbour commission at the end of the season was, 3.859 miles of 30 feet depth of water alongside; 2.627 miles of 25 to 27 feet; 0.666 mile of 20 feet and under; total, 7.152 miles. And the grand total length of railway tracks in use was 37.9 miles.

The total amount received on revenue account was \$1,361,964.06—an increase of \$312,652.56 over that of the previous year. Besides this there was received \$1,940,000 from the Dominion Government.

The expenditure on revenue account for the same period was \$1,352,636.36, and on capital account, \$2,461,794.62.

The debenture debt was \$21,522,000—\$1,672,000 of which is to the public and \$19,850,000 to the Dominion Government—all bearing 3.344 per cent interest.

### QUEBEC HARBOUR COMMISSION.

Many improvements have been made during the year. The bulkhead wall on Princess Louise embankment was begun, the "Long wharf" in Indian cove repaired and tracks laid upon it for a travelling derrick, and other improvements made. A wharf 160 feet long was built on the Quarry property, compressor plant and locomotive crane installed.

Two powerful dredges, six dump scows, and two tow boats were purchased.

A grain elevator having 1,000,000 bushels capacity is being built on the Louise Embankment. It is fireproof and will have marine tower, conveyer gallery, a dryer, and a self-contained floating elevator.

The car ferry terminals have been improved, 7,000 feet of track laid, and sheds improved. Two coal-discharging towers have been built on the wet dock.

The railway traffic on the commission's property was reorganized on the 1st of July, 1913, and put in charge of the traffic department, which uses three powerful switching locomotives for that purpose.

The number of vessels which entered the St. Charles docks and wharves was 413, having a total tonnage of 1,997,111 registered tons.

The harbour was open all winter, and ferry boats made regular trips. The report of the Quebec Harbour Commissioners forms an appendix to this report.

The revenue was \$232,334.73, the expenditure chargeable to revenue was \$229,307.90. The expenditure on capital account was \$2,843,153.58.



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## THREE RIVERS HARBOUR COMMISSION.

The number of ocean vessels which entered the harbour of Three Rivers during the year 1913 was forty-three, with a registered tonnage of 104,373 tons. The United States (principally canal barges) numbered 439, with 51,665 registered tons, while the Canadian inland water vessels entered, were 689, with 130,644 registered tons—making a total of 1,171 vessels with 286,682 registered tons.

The principal imports were 89,652 tons hard and 12,455 tons soft coal, 10,400 tons sulphur, 1,017 tons pulp, 3,658 cords pulpwood, and 2,999,500 brick; and the principal exports, 45,581,000 feet of lumber, 32,389 cords pulpwood, 140,600 tons sand, 2,805 tons wood pulp, 622 tons concrete beams, and 1,911,000 laths.

The total receipts amounted to \$21,233.11, the total expenditure was \$17,984.17, and the amount in fund, \$28,569.28.

## NORTH SYDNEY HARBOUR COMMISSION.

A roadway has been built, and much grading done on the breakwater property owned by the commission.

The amount of coal shipped during the year was 481,449 tons, and of iron ore, 127,560 tons; 8,260 tons of general merchandise were imported during the year.

The receipts amounted to \$5,415.75; the expenditure to \$4,906.49, and the balance on hand to \$509.26.

## PICTOU HARBOUR COMMISSION.

The work principally done by this commission consisted of attending to, placing, and removing buoys, bushing the East river, and removing obstructions.

The collections from vessels on account of revenue were made at the custom-house, Pictou, and amounted to \$1,409.67, and the expenditure of the commissioners to \$285.56, leaving a balance of \$1,124.11.

## TORONTO HARBOUR COMMISSION.

The report of 1912 referred to the change made in the administration and development of Toronto harbour. The preliminary arrangements were chiefly described in the report of last year, but in the report of this year the progress made in development and extension of the property under control of the harbour commissioners are fully described.

The importance of the undertaking may be realized by the fact that a contract was entered into by the commissioners for dredging, filling in, and reclamation in the proposed Industrial District and elsewhere, at a cost of \$3,950,000, with the option of increasing the extent of the work, from time to time, at the same cost per unit figure.

The Public Works Department of the Dominion Government has also made a contract for construction of a breakwater from Woodbine avenue to the eastern channel of the lake front, and for another breakwater to extend from the Humber river to the western channel on the western lake front.

The Government has also undertaken the construction of lift bridges across the eastern and western channels and over the ship channel at the industrial section.



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The Yonge Street dock, formerly under lease, was made a public dock for moorage purposes, landing, and shipping articles carried by vessels. A system of supervising the landing of goods, and storing them, was adopted at the public dock, and a tariff of tolls put in force.

An arrangement was made with the life-saving service of the Marine Department for aid from the Toronto life-saving station.

Advantageous arrangements were made for the exchange of property with the Canadian Pacific Railway, with a view of acquiring the control of the water-front. Riparian rights were secured in Ashbridges bay with the same object.

Steps were taken, leading to the construction of a viaduct across the railway tracks along the water-front.

Plans were made and adopted for a transportation system by radial railways to and from docks and the properties under control of the Harbour Commissioners; land and hydrographical surveys and special surveys for water data were made. Dredging was done and wharf construction was carried on, and plant was purchased for these operations.

The detailed report embracing all transactions is published as an appendix to this report. The report contains a statement of receipts amounting to \$1,236,070.39, including a debenture loan. The expenditure for all purposes amounted to \$1,241,272.75 for the year 1913. The expenditure by the Public Works Department is not included.

#### BELLEVILLE, ONT., HARBOUR COMMISSION.

The imports for the year ending the 31st December, 1913, consisted of 16,671 tons of coal, 76,000 feet of lumber, and 940 tons of general merchandise, the revenue from which was \$1,764.90.

The exports for the same period were 881 barrels of oil, 1,524 tons merchandise, and 1,050 tons of cheese, the revenue from which was \$283.83. The total revenue, therefore, was \$2,048.73. The balance on hand from previous year was \$451.93, making a total revenue account of \$2,500.66.

The total amount in the bank to the credit of the sinking fund was \$4,907.60.

#### STEAMBOAT INSPECTION.

Two appointments have been made in this branch of the service during the fiscal year. Mr. Thomas R. Ferguson, inspector of Dominion steamers, was appointed chairman of the board of steamboat inspection from the 1st of April, 1913, and Mr. Denis J. Murray was appointed inspector of boilers, machinery and ships' tackle at Halifax, N.S.

Mr. Frank McDonnell, assistant chairman, left Ottawa on the 28th of October, 1913, to attend the International Conference on Safety of Life at Sea, held in London, England.

The rules governing the inspection of boilers and machinery were discussed at several meetings held by the board of steamboat inspection with the object of determining their correct interpretation.



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The total number of vessels inspected, owned, or registered in the Dominion was 1,921, with a gross tonnage of 604,036 tons. The number owned or registered elsewhere was 185, total gross tonnage 252,414 tons. Number of vessels not inspected was 335, total gross tonnage 41,735 tons. The total number subject to inspection when in commission was 2,441, total gross tonnage 898,207 tons. The number of vessels added was 151, with a gross tonnage of 54,928 tons. The number lost or destroyed was 55, total gross tonnage 23,463 tons. The total fees collected on account of inspections and examinations of engineers was \$5,197.96.

## LIST OF INSPECTORS.

*Boilers and Machinery.*

N. A. Currie, Halifax, N.S.  
D. J. Murray, Halifax, N.S.  
C. E. Dalton, St. John, N.B.  
J. H. Fontaine, Quebec, Que.  
F. X. Hamelin, Sorel, P.Q.  
W. Laurie, Montreal, Que.  
J. E. Lunan, Montreal, Que.  
T. P. Thompson, Kingston, Ont.  
J. Dodds, Toronto, Ont.

J. B. Stewart, Toronto, Ont.  
G. M. Arnold, Toronto, Ont.  
E. W. McKean, Collingwood, Ont.  
W. J. Vigars, Port Arthur, Ont.  
G. P. Phillips, Kenora, Ont.  
B. Mantrop, Victoria, B.C.  
W. J. Cullum, Victoria, B.C.  
H. G. Robinson, Vancouver, B.C.  
A. E. Hopper, Vancouver, B.C.

*Hull Inspectors.*

A. McDougall, Halifax, N.S.  
I. J. Olive, St. John, N.B.  
P. Duclos, Quebec, Que.  
M. R. Davis, Kingston, Ont.

W. Evans, Toronto, Ont.  
S. D. Andrews, Collingwood, Ont.  
F. F. Pickard, Victoria, B.C.

## INVESTIGATION INTO WRECKS.

H. St. G. Lindsay, Dominion Wreck Commissioner, reported seven preliminary, two departmental, and twenty-four formal investigations into causes of wrecks and casualties in Canadian waters during the fiscal year.

Five masters, two engineers, two second engineers, and two pilots were cautioned to be more careful in future. Six masters, two first and second officers, and one pilot were censured. One master's, one first officer's, and one pilot's papers were suspended for six months.

In ten investigations it was shown that no one was to blame. Two cases were referred to foreign authorities for action.

## WRECKS AND CASUALTIES OF SEA-GOING AND INLAND WATERS VESSELS REPORTED.

The total number of wrecks reported as having occurred to Canadian vessels in foreign waters and to vessels in Canadian waters during the fiscal year was 289. Of this total, 218 were partial (164 sea-going and 54 inland waters). The total wrecks were 71 (50 sea-going and 21 inland waters).

The tonnage affected was 313,819.55 registered tons, 159,444.27 of this total being sea-going partial wrecks, 83,609.36 tons inland waters partial wrecks and 27,279.56 tons inland waters total wrecks.

Sixty-six sea-going and twenty-six inland waters vessels, having a total tonnage of 103,859.34 tons, did not report the amount of loss suffered in partial wrecks, and twenty sea-going vessels and ten inland waters vessels are reported to have suffered no loss.



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The total loss in vessels and cargoes reported was \$2,087,867.99. Of this total, \$1,396,827.97 was in sea-going vessels and \$691,040 in inland waters vessels.

The amount of loss reported as having been caused by partial wrecks and casualties was \$389,855.65 in sea-going and \$175,340 in inland waters vessels and cargoes; \$906,972.92 in sea-going and \$515,700 in inland water total wrecks.

The total loss of life is reported as 160.

## MASTERS AND MATES CERTIFICATES.

### EASTERN DIVISION.

During the fiscal year ending 31st March, 1914, 265 candidates were examined, thirteen for sea-going masters' certificates, forty-nine for coasting masters', sixteen for inland waters masters', sixty-five for minor water masters' and eight for temporary certificates were examined.

In the same division, fifteen were examined for sea-going first mates' certificates, and sixteen for sea-going second mates' certificates, sixty-two for coasting mates' certificates, and twenty-one for minor waters mates' certificates.

Fifty-four candidates failed: four for masters' sea-going certificates, seven for coasting, six for inland waters, and seven for minor waters masters' certificates; five candidates for mates and four for second mates' sea-going, ten for coasting, five for inland waters, and six for minor waters mates' certificates.

Nineteen underwent the sight test.

### WESTERN DIVISION.

In the western division, 312 candidates were examined, one for sea-going masters' certificates, fifty-two for coasting, sixty-two for inland waters, twenty-three for minor waters, and twenty-one for temporary certificates for masters, six for sea-going mates, seven for sea-going second mates, fifty for coasting, sixty-two for inland waters, and twenty-eight for minor waters certificates for mates. Eight underwent the sight tests.

Fifty-three candidates failed: five for coasting masters', ten for inland waters, one for minor waters masters' certificates; eighteen for coasting, ten for inland waters, and nine for minor waters mates' certificates; the number that underwent the sight test was fourteen.

The total number of certificates issued during the year was 491, classified as follows: 276 to masters, 196 to mates, and 19 to second mates.

## NAVIGATION SCHOOLS.

Six schools were in operation during certain portions of the year. The school at St. John, N.B., being started during the year, did not have regular sessions or attendance and therefore is not included in the list of total attendance.



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The following table shows where schools were held, the name of instructor, the number of sessions held, the total and average attendance at each school:—

Locality.	Instructor.	No. of days.	Total. Attendance.	Average.
Quebec, Que.....	Capt. P. L. Lachance.....	240	1,239	· 5
North Sydney, N.S.....	" Jas. Sutherland.....	27	147	· 5
Yarmouth, N.S. ....	" J. E. Murphy.....	31	177	· 5
St. John, N.B.....	" Rufus Cole.....	.....	.....	.....
Collingwood, Ont. ....	" Geo. C. Coles.....	32	588	· 18+
Vancouver, B.C....	" Chas, Eddie.....	17	298	· 17
Total.....	.....	347	2,449	7·06

SHIPPING AND DISCHARGING OF SEAMEN.

According to the eighty-four returns sent in by shipping masters during the year ending 31st December, 1913, 16,971 seamen were shipped, 13,046 discharged, and the sum of \$1,304.65 was collected as fees, which are retained by shipping masters.

The list of ports, the number of seamen shipped, the number discharged and the amount of fees collected in each province follows:—

—	No. of Returns.	Seamen Shipped.	Seamen Discharged.	Amount.
Quebec .....	2	1,199	1,615	\$ cts. 1,084 00
New Brunswick.....	11	2,026	778	1,312 00
Nova Scotia.....	57	8,360	6,776	6,253 30
Prince Edward Island.....	7	373	115	219 90
British Columbia.....	7	5,017	4,465	4,177 45
	84	16,975	13,749	13,046 65

PILOTAGE.

Thirty-one pilotage authorities sent in returns—twelve in Nova Scotia, twelve in New Brunswick, one in Prince Edward Island, two in Quebec, and four in British Columbia.

There are 124 commissioners, 302 pilots, and 54 apprentices on the lists, and 7,380 vessels paid pilotage to the amount of \$483,497.76 during the year.

A tabulated statement which precedes appendix No. 15 shows some of the particulars respecting pilotage districts.

SICK AND DISTRESSED MARINERS.

Under the provisions of the Canada Shipping Act, chapter 113, part 5, s. 384, R.S., dues of 1½ cents per ton, registered tonnage, are levied on every vessel entering any port of the provinces of Quebec, Nova Scotia, New Brunswick, Prince Edward Island,



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and British Columbia. The money thus collected forms the "Sick Mariners' Fund." Vessels of the burden of 100 tons and less pay duty once in each calendar year, and vessels of more than 100 tons, registered tonnage, three times in each year.

The officers and seamen of all fishing vessels not registered in Canada do not pay sick mariners' dues nor participate in the benefits accruing therefrom, but such vessels registered in Canada may pay dues and participate in the benefits; and if of more than 100 tons, only for the voyage at the beginning of which payment has been made; such vessels shall enjoy the same rights and benefits as are enjoyed by vessels which pay dues and are not engaged in fishing.

The Act, chapter 113, Canadian Shipping, does not apply to the province of Ontario, so no dues are collected from vessels in that province.

## PROVINCE OF QUEBEC.

At the port of Quebec, sick mariners are cared for at the Jeffrey Hale and Hotel Dieu hospitals, at a per diem allowance of \$1.50 for each seaman, including medical attendance and board.

At the port of Montreal, sick mariners are cared for at the General and Notre Dame hospitals, the charges at each institution being \$1.50 a day, including board and medical attendance. Infectious and contagious diseases are attended at the Alexandra and St. Paul hospitals.

At the port of Three Rivers, sick mariners are cared for at the St. Joseph's hospital, per diem rate, 90 cents for each seaman. The medical officer receives \$350 per annum for his services.

At the port of Chicoutimi, sick mariners are cared for at the St. Valier hospital; rate, \$1.20 a day for each seaman, including treatment and board.

At the port of St. Johns the mariners are attached at the St. Johns hospital; rate, 90 cents a day. The medical officer receives a salary of \$600 a year.

At the ports of Rimouski, Montmagny, Sorel, and Rivière-du-Loup, sick mariners are attended at the local hospitals, and the medical services are rendered by the port physician.

## PROVINCE OF NOVA SCOTIA.

Marine hospitals are maintained at Louisburg, Lunenburg, Sydney, and Yarmouth.

At the port of Halifax, sick mariners are cared for at Victoria General hospital; rate, \$1.50 a day, including board and treatment. Contagious cases are treated at the City Isolation hospital.

At Pictou, sick mariners are taken to the Pictou Cottage hospital; rate, \$1 a day. The medical officer is paid a yearly salary of \$400.

At North Sydney, sick mariners are attended at the Hamilton Memorial hospital; rate, \$1 a day. The medical officer receives a salary of \$750 a year, including drugs supplied.

At Windsor, sick mariners are treated at the Payzant Memorial hospital; rate, \$1 a day. The medical officer receives a salary of \$120 a year.



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At Amherst, sick mariners are treated at the Island View hospital; rate, \$4.50 a week. The medical and surgical services are rendered by the port physician.

At Parrsboro and vicinity, sick mariners are taken to the Cottage hospital at Springhill; rate, \$1.50 a day, including all costs.

At the port of Digby, sick mariners are treated in designated hospital; rate, \$3 a week, besides a salary of \$50 for the caretaker. The medical officer receives a salary of \$250 a year.

## PROVINCE OF BRITISH COLUMBIA.

At Victoria, sick mariners are treated at the St. Joseph's hospital; rate, \$1.40 a day. The medical officer receives a salary of \$600 a year.

At Vancouver, sick mariners are treated at the St. Paul hospital; rate \$1.50 a day, including all costs.

At Nanaimo, seamen are treated at the Nanaimo hospital; rate, \$1 a day. The medical officer receives a salary of \$600 a year.

At New Westminster, sick mariners are taken to the Royal Columbia hospital; rate, \$1 a day.

At Chemainus and Ladysmith, sick mariners are treated in the local hospitals at the rate of \$1 a day, besides medical and surgical services.

At Prince Rupert, sick mariners are treated in the Prince Rupert General hospital; rate, \$2 a day.

## PROVINCE OF NEW BRUNSWICK.

A marine hospital is operated and maintained at Douglstown for sick mariners arriving at Chatham, Newcastle, and vicinity. The medical officer receives a salary of \$450 a year, and the keeper \$250 a year.

At St. John, sick mariners are treated in the General Public Commissioners' hospital; rate, \$1.50 a day, including all costs.

At Campbellton, treatment is given at Hotel Dieu hospital; rate, \$5 a week. The medical officer receives a salary of \$350 per annum.

At Moncton, sick mariners are treated at the Moncton hospital; rate, \$4 a week. The medical officer receives a salary of \$200 a year.

## PROVINCE OF PRINCE EDWARD ISLAND.

At Charlottetown, sick mariners are treated in the Charlottetown and Prince Edward Island hospitals; rate, \$1.50 a day, including all costs.

At Summerside, sick mariners are treated at the Prince County hospital, rate, \$1 a day. The port physician receives a salary of \$250 a year.

Where no hospital is maintained in any port of the maritime provinces, Quebec, or British Columbia, the collectors of customs are authorized to care for sick mariners entitled to receive the benefits of the fund.



Statement of receipts and expenditure on account of " Sick and Distressed Seamen " from the fiscal year 1904 to 1913, both inclusive:—

	Receipts.	Expenditure.
	\$ cts.	\$ cts.
1904.....	61,778 29	50,801 78
1905.....	58,372 34	51,000 18
1906.....	60,183 90	50,120 42
1907.....	44,704 59	34,362 11
1908.....	69,364 45	59,957 92
1909.....	53,732 31	66,349 26
1910.....	55,567 41	54,859 50
1911.....	60,637 11	54,779 27
1912.....	63,663 41	52,172 75
1913.....	70,540 52	54,294 71

Total amount of salaries paid to medical officers during the year 1913-14 was \$14,897.50.

Number of seamen treated was 3,245, compared with 3,187 in the preceding year, while the number of days of hospital treatment was 22,140.

Number of vessels which paid sick mariners dues during the year 1913-14 was 3,062, and the number of men employed on these vessels, 59,250.

PORT WARDENS.

Fifteen port wardens reported the transactions in connection with their offices during the year; seven of the reports are from Nova Scotia, three from New Brunswick, two from Quebec, three from British Columbia.

The services rendered consisted of surveys of hatches, cargoes, and hulls; the surveys of hulls were principally for seaworthy certificates, and the surveys of cargoes to estimate damage received on the voyages; the hatch surveys were made to ascertain the condition of the cargoes on arrival.

In the case of Montreal, the port warden's report includes shipments of grain and other products, and the time of the opening and closing of the season of navigation.

The fees collected by the port wardens who reported amounted to \$15,059.72; these fees are according to the Port Wardens' Act, which regulates the charge for the kind of surveys made; in some instances not exceeding \$8, and in others not exceeding \$20.

A detailed statement of shipments, receipts and expenditures will be found in the returns of the Board of Trade for the port of Montreal.



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## LIST OF PORT WARDENS WHO MADE RETURNS AND THE AMOUNT OF FEES COLLECTED.

Port.	Port Warden.	Fees.
		\$ cts.
Annapolis, N.S.....	Joseph Malleson.....	Nil.
Chatham, N.B.....	M. A. Goggin.....	"
Halifax, N.S.....	Neil Hall.....	2,736 14
Louisburg, N.S.....	D. J. Matheson.....	112 00
Moncton, N.B.....	R. C. Bacon.....	Nil.
Montreal, P.Q.....	Archibald Reid.....	9,711 98
Nanaimo, B.C.....	J. S. Knarston.....	21 00
North Sydney, N.S.....	W. H. Kelly.....	116 00
Port Hawkesbury, N.S.....	Nicholas Martin.....	103 00
Prince Edward Island.....	George H. Holbrook.....	12 50
Quebec, P.Q.....	Alex. Russell.....	1,057 10
St. Andrews, N.B.....	John Wren.....	5 00
Sydney, (Intrl. Pier.) N.S.....	Nelson H. Townsend.....	600 00
Victoria, B.C.....	Charles E. Clarke.....	432 50
Yarmouth, N.S.....	R. M. Ferguson.....	152 50
		15,059 72

## CORRESPONDENCE AND RECORDS BRANCH.

The Records Branch of the department embraces the receiving and despatching of letters. The letters and telegrams received are registered, numbered, stamped with date received, indexed, placed on files, and the files charged and distributed to the officers who take action upon the letters and telegrams. Copies of letters are placed upon the files, and the files examined to ascertain if all letters have been answered or acknowledged, and then they are discharged and placed in receptacles.

The registering of letters consists of entering the number of the file and a brief synopsis of the subject of the letter; the indexing includes pages of personal names in a book, and the card system, locality names, subjects, and vessel names.

The letters and telegrams despatched are copied in letterpress books and indexed. The number of letters despatched during the year was 41,121. The increase in the numbers of letters received and despatched during the last ten years shows the growth of the work of the department and consequent increase of staff, as a whole, including the Records Branch. An establishment record is maintained in this branch in which the names of all employees of the department, with particulars of service, are recorded.

The letters received in 1901 numbered 18,741, and despatched, 13,000; while in the past year 52,605 were received and 41,121 despatched.

## LIVE STOCK SHIPMENTS.

The inspectors of live stock shipments at the port of Montreal report that 134 horses, 512 cattle, 97 mules, and 296 sheep were shipped to Great Britain from 1st of May to 30th November, 1913.

No returns have been received by the department from the ports of Halifax and St. John.



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## SAFETY OF LIFE AT SEA CONVENTION.

His Majesty's Government invited a number of maritime States to a conference to be held in London in November, 1913, to consider the question of international regulations for the safety of life at sea on board ships engaged in maritime traffic, particularly passenger steamers.

Invitations were sent to Germany, Austria, France, United States of America, Belgium, Denmark, Spain, Russia, Sweden, Norway, Italy, Holland, Canada, Australia, and New Zealand, requesting the appointment of plenipotentiaries to take part in the conference.

His Majesty's Government was impressed with the necessity of adopting more effective means to secure the safety of life at sea. The investigation into the loss of the *Titanic* revealed many defects in the existing appliances for saving life, and in the construction of large passenger steamers that had met with accidents at sea resulting in great loss of life.

Upon the recommendation of the Minister of Marine and Fisheries, and the Secretary of State for External Affairs, I was appointed the representative of Canada to the conference, with powers to sign a Convention at the conclusion of the conference.

Before proceeding to London, I deemed it advisable to obtain opinions and suggestions from steamboat owners, marine associations, agents, and others, familiar with the rules, discipline, practice, and equipment generally applied, in accordance with the then existing regulations in force under the laws relating to merchant shipping. Ready responses were received to the inquiries, containing valuable suggestions on safety of life at sea.

For the purpose of consultation at the conference relating to technical details of Canadian requirements, Mr. C. M. F. Duguid, Chief Naval Constructor to the department, and Mr. Frank McDonell, Assistant Chairman of the Board of Steamboat Inspection, accompanied me to London, and to this consulting staff was added Major H. Maitland Kersey, Manager in Chief of the Ocean Service of the Canadian Pacific Railway Company, resident in London.

To these, by reason of the intelligent participation in the deliberations of the various committees, I am indebted for the prominent part that Canada was enabled to take at the conference.

The department owes especial thanks to Major Kersey, who, at considerable sacrifice and without remuneration, was unfailing in his attendance at the committee meetings, where his very extensive knowledge of all matters relating to the construction and equipment of steamships was of very great advantage.

The conference held its first meeting in London on the 12th of November, 1913, at which delegates from all the countries above mentioned were present.

Lord Mersey was chosen chairman, and general secretaries were appointed.

A programme was decided upon for a systematic investigation and consideration of revised and improved regulations, to be known as International Regulations or Rules.

Five committees were appointed, and a principal subject assigned to each committee for its deliberation and conclusions, signified by its adoption of resolutions. The five principal subjects were the safety of navigation, safety of construction, wire-



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less telegraphy, life-saving appliances, and the issuing of certificates to ships of the Contracting States, which complied with the requirements of the Convention, to be valid in all the countries, as evidence of compliance by the vessel with the Convention.

The committees were convened by chairmen, and discussed the subjects assigned to them in all the necessary details considered relevant to the particular subject or question.

The conclusions were embodied in resolutions adopted by each committee. Sessions of committees were held almost daily, until all of the proposed regulations were considered ready for adoption by the conference as a whole, after the committees had concluded their work.

The conference was re-convened by Lord Mersey, and summarized notes, prepared by each committee, were read.

On the 20th of January, 1914, the regulations were agreed to unanimously, and on the following day the document containing the regulations in full was signed by the representatives from each country.

Minutes of each committee have been published separately, in English and French, and the document termed the International Convention for the Safety of Human Life at Sea, embodying all the new regulations proposed, with the names of the signatories, has also been published in both languages. The latter publication embraces all questions and matters pertaining to the proposed rules and regulations to be observed, as the minimum of the standard of the Convention. Chapters under the caption of each principal subject are subdivided by articles numbered consecutively from the beginning of Chapter I to the end of Chapter V. By this simple arrangement each chapter and the number of the article can be quoted in referring to any particular regulation.

In this necessarily brief report, only the main features of the conference are described, and that in a general way. Brief references to the subject-matter of each chapter of the regulations will doubtless be interesting to shipping men concerned in safety of life and to the public travelling by water.

Certificates to ships, issued by countries agreeing to the Convention, will have their value in showing that the ship has complied with the requirements of the Convention, or a system approved by the Administration of a participating State equally effective, or surpassing the Convention.

Navigation as applied especially to the dangers met with in ocean traffic, particularly in the North Atlantic, viz., icebergs and derelicts, was extensively considered. Patrolling the North Atlantic ocean is proposed with a view of warning ocean-going vessels, by wireless telegraphy, of the vicinity of icebergs, also reporting the localities of derelicts and destroying the same.

The proposal to place this service under the control of the United States, with certain countries contributing to the cost, is one of the provisions of the Convention. In addition, vessels aware of dangers of this class are supposed to warn other vessels on the ocean, by means of an approved code.

The chapter on safety of construction divides vessels into two classes, vessels existing and vessels to be built after the Convention goes into effect. Construction of vessels with regard to safety being a technical matter, is involved in many compli-



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cations. The question of water-tight compartments, suitable for the service in which the vessel is employed, is one of the most difficult and important regulations framed by the committee charged with the labour of considering the safety of construction. Provisions are made for the survey of both new and old vessels.

Provisions for wireless telegraphy installations, contemplate the use of apparatus on all vessels going beyond 150 sea miles from land. Ships are placed in categories of the Radio-Telegraph Convention; ocean-going passenger steamers to be placed in the first category, and steamers not carrying more than twenty-five passengers in the third category.

Life-saving appliances completes the list of principal subjects or chapters of the Convention. Types of life-saving and other boats are recommended with dimensions of sufficient capacity for the class of steamers supplied with them. Drills and muster are specified proposals; life jackets, life buoys, and life-saving rafts are among the requirements of the regulations under this head.

The Convention was signed by the representatives of the participating States with the understanding that it would only have effect in countries ratifying the Convention. Provision has also been made for the participation of other countries expressing a willingness to apply the regulations of the International Convention. The conference decided that the Convention shall come into effect on July 2, 1915, if approved by the signatory States.

#### LEGISLATION.

An Act to amend the law relating to Merchant Shipping with a view to enable certain conventions to be carried into effect.

An Act respecting the harbour of North Sydney, N.S.

An Act to amend an Act to incorporate the Harbour Commissioners of Vancouver.

An Act to provide for further advances to the Harbour Commissioners of Montreal.

An Act to amend the Montreal Harbour Commissioners Act, 1894.

An Act to provide for further advances to the Quebec Harbour Commissioners.

An Act to amend Part VI of the Canada Shipping Act.

An Act to amend Part X of the Canada Shipping Act.

A. JOHNSTON,

*Deputy Minister of Marine and Fisheries Department.*



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## APPENDIX No. 1.

ANNUAL REPORT OF THE CHIEF ENGINEER OF THE DEPARTMENT  
OF MARINE AND FISHERIES.

The Deputy Minister of Marine and Fisheries,  
Ottawa.

SIR,—I have the honour to submit the following report of work done in the several services under the supervision of this office during the twelve months ended March 31, 1914.

There have been no changes in the duties pertaining to this branch during the past year; they remain as enumerated in previous reports.

## STAFF.

The following changes have been made in the staff of my office:—

J. B. Christie, draughtsman, resigned, June 20, 1913; N. T. Binks, draughtsman, resigned, October 21, 1913; S. J. Wight, temporarily appointed April 7, 1913; resigned, April 8, 1913; D. L. McDougall, draughtsman, temporarily appointed, September 1, 1913; left March 18, 1914; B. E. Parry, draughtsman, temporarily appointed, September 25, 1913; engagement concluded, February 2, 1914; Miss M. Hickey, clerk, temporarily appointed June 25, 1913; transferred June 30, 1913; G. H. Raitt, clerk, temporarily appointed May 28, 1913; resigned July 3, 1913; G. S. Macdonald, assistant engineer, temporarily appointed January 19, 1914; transferred to St. John, March 27, 1914; A. C. Andrézen, draughtsman, temporarily employed August 13, 1913; P. L. Kuhring, assistant engineer, temporarily employed November 19, 1913; Miss Mary T. Edwards, clerk, permanently appointed July 5, 1914; Hope V. Anderson, mechanical engineer, permanently appointed, August 11, 1913.

The following members of the staff have been employed in superintending work away from headquarters:

Mr. F. P. Jennings, assistant engineer, was in charge of the construction work on the enlargement of the Prescott depot from May 28, 1913, to the end of the fiscal year.

Mr. J. Henderson was in charge of extensive repairs at Gannet rock and Machias Seal island light stations from May 16 to November 27. Shortly after his return to Ottawa he was taken seriously ill and had not been able to return to duty up to the first of the year.

I regret to report more than an ordinary percentage of illness amongst the staff during the past year, and would suggest a more rigid medical inspection of candidates for appointment to the Civil Service.

## OFFICE WORK.

The largest part of the work done by the general staff of the branch consists in the construction, repair, and improvement of light buildings, fog alarms, beacons, and other aids to navigation, the supply of new or improved illuminating apparatus, etc., the payment of expenditures for these services being made out of the vote of \$1,000,000 for construction of aids to navigation. Full details of the work done in



this connection during the past year are contained in a separate report in tabular form attached hereto which gives a complete statement of all expenditure charged to the vote in question. (Enclosure A.)

In addition to the work of this branch done under the above vote, the staff have been called upon to perform work of varied description for other branches of the department, and which may be summed up as follows:—

*For the Meteorological Service Branch.*—Erection of storm signal masts at North Sydney, N.S., and Sydney, Cape Breton.

*For the Life Saving Branch.*—Construction of a combined boat-house and dwelling at Ucluelet, B.C.

Improvements and extensions to boat-house construction and septic tank, drainage, and erection of a 4-section steel skeleton lookout tower at Toronto, Ont.

The work of completion of titles to all properties owned by this department, mentioned in my last year's annual report, has been satisfactorily continued, and during the past twelve months, 158 deeds and other title documents to lighthouse properties have been added to our records. In the case of all new properties acquired, expropriation plans and descriptions are filed in addition to the usual notarial deeds as an extra precaution.

The work in connection with applications for water lots has been very heavy, as will be seen by reference to the draughting-room statistics. Every application has to be examined, entered on an index plan, plans and descriptions checked, and the proposition reported on and valued. This involves a great deal of detail and takes the time of one draughtsman. Both these branches of work are in charge of Mr. J. W. G. Roberts, whom I desire again to favourably mention.

Plans and specifications for all important new buildings and repairs, new vessels, etc., are made or approved in this office.

The following table indicates the work done in the draughting office during the twelve months ended March 31, 1914:—

Description of Work.	Plans Designed.	Plans Received.	Copies Made.
Lighthouse towers and dwellings . . . . .	32	2	450
Fog alarm buildings . . . . .	12	....	230
Details . . . . .	39	3	340
Wharves, piers, etc . . . . .	11	39	66
Outbuildings . . . . .	18	3	144
Machinery . . . . .	14	16	152
Lanterns and illuminating apparatus . . . . .	30	79	400
Buoys and appurtenances . . . . .	9	30	505
Beacons . . . . .	.....	10	10
Steamers . . . . .	.....	80	32
Land surveys . . . . .	98	149	473
Plans relating to waterlot applications . . . . .	34	533	129
Miscellaneous . . . . .	77	442	310

Total plans for 12 months from April 1, 1913, to March 31, 1914 . . . . .	5,001
Charts received and recorded . . . . .	402
Charts received and entered in chart books . . . . .	51
Photographs received and recorded . . . . .	403
Specifications and bills of material written . . . . .	140
Notices to mariners issued (comprising 487 subjects) . . . . .	151



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## PUBLICATIONS.

The work of preparing and issuing notices to mariners continues to be heavy and urgent. During the past twelve months, 151 notices, covering 487 subjects have been published, being an increase of 28 notices and 126 subjects over last year. Amongst important notices, involving considerable labour in compilation, and representing useful work done in the department are:—

Warnings and directions to vessels approaching Canadian ports during military manœuvres, or on certain other public occasions.

Signals to be made by vessels approaching Canadian ports when inconvenienced by searchlights.

Two items relating to ice patrol service off the east coast of North America, to locate the icebergs and field-ice nearest to the trans-Atlantic steamship routes.

Weather probabilities communicated from all the radiotelegraph stations under the control of the Department of the Naval Service of Canada to any ship asking for them.

Particulars and list of Canadian radio-telegraph stations throughout Canada.

Establishment of telephone connection between Devil island life-saving station, in the approach to Halifax and the mainland.

Regulations governing the opening, closing, and lighting of the railway swing bridge between Goat island and Manitoulin island.

Description of improvements being made by the Department of Public Works in Courtenay bay, St. John harbour, including dredging of a channel and construction of a breakwater and dry dock.

List of buoys marking the Repentigny channel of the river St. Lawrence, from Lavaltrie to Ile Deslauriers, and description of five sets of range lights established to mark the same channel.

A complete list of buoys and beacons in Byng inlet and its approach, with hydrographic notes.

Hydrographic information respecting Newcastle harbour, lake Ontario.

Description of dredging performed and buoys established in Matchedash bay, from Fesserton, Ont., to Coldwater creek; and dredging done in Coldwater creek up to Coldwater.

Description of buoys in the approaches to Toronto harbour.

Description of buoyage of Guysborough harbour.

Description of changes made in the buoyage of Bar channel, Detroit river.

Description and list of beacons marking the channels of the Big slue, the Serpentine and Nicomek'l river, at Mud bay, Boundary bay, B.C.

Twenty-one items were published describing dredging operations performed by the Department of Public Works in different parts of the Dominion.

During the past twelve months notices relating to waters outside of Canada were issued, covering fourteen items relating to Newfoundland and Labrador, twenty-two items relating to the inland, and seven to the Pacific waters of the United States, as well as nine notices referring to transatlantic and one notice relating to transpacific subjects. No attempt is made to issue a complete synopsis of British or foreign notices, but merely to publish items likely to be of immediate interest to Canadian vessels, or to vessels leaving Canadian ports for the more important or frequented foreign ports.

The annual edition of the "List of Lights and Fog Signals" was prepared and published in three separate volumes, one for the Atlantic coast and the river St. Lawrence to head of ocean navigation; one for the inland waters of Canada, and the third for the Pacific coast.

A new edition of the "List of Buoys, Beacons, and Day Marks" on the Pacific coast of the Dominion of Canada was prepared and published, thoroughly revised and corrected by the undersigned personally, to the first of January, 1914.



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I can again commend Mr. J. M. O'Hanly for the careful and conscientious work he devotes to this division of my branch's work.

#### PERSONAL INSPECTIONS.

During the past fiscal year, as in former years, several inspections of works under the control of the Marine Branch of the department were made for the purpose of locating new aids to navigation, inspecting contract work, or examining existing aids, to decide upon improvements or repairs required. These were made both by the chief engineer and his chief assistant, and the opinion is expressed that such inspections are a most necessary and useful part of the official routine, and that more general and frequent inspections of all construction work would conduce to more efficient completion of work.

Amongst the more important trips taken by the chief engineer may be enumerated: a general inspection of aids on the Great Lakes in June, 1913; an inspection from Quebec to Belle Isle with the deputy minister in July; an inspection of the lakes in company with the deputy minister as far as Port Arthur in August, and a return with the minister and Senator Thorne in September to Prescott; inspections and construction work on the bay of Quinte in September and October; an inspection of the new departmental depot at St. John in January, 1914; and attendance at the annual meeting of the Lake Carriers' Association in Detroit in the same month, when matters of great interest to the Canadian marine were discussed. One point of importance brought out was the unanimous verdict of the most skilled navigators on the lakes, that no blame could be attached to Canadian aids to navigation in connection with the disasters that occurred in the great November storm, and that no provision, in the way of aids to navigation, could have lessened that disaster.

The principal trips taken during the past fiscal year by Mr. Fraser, my chief assistant, were in connection with the following works:—

In April, 1913, Mr. Fraser took personal charge of the movement of the grain fleet from the head of lake Superior. This involved ice-breaking operations at the foot of the lake, of considerable extent and difficulty. He also gave a great deal of personal attention to the remodelling and extension of the workshops at Prescott, and the installation of the depots at St. John and Victoria. A number of visits were made to Prescott, several visits were made to St. John, and in November a visit was made to Victoria, where arrangements were made for beginning work on the new depot at that place.

#### DEPARTMENTAL DEPOTS.

I view with great satisfaction the work done during the past year in the development of departmental depots, being convinced that this progressive policy will result in increased efficiency as well as great economy in the management of the lighthouse, buoy and other departmental services. The Chief Engineer's Branch has been mainly instrumental in this development.

The depot at Prince Rupert reported completed last year, has not been utilized to its full capacity, in consequence of the inability of the department to allot a steam tender for the station.

At Victoria, B.C., a site for a depot has been secured from the Provincial Government on the Songhees reserve, adjoining Johnston street bridge, where there is ample room for wharf and store accommodation close to the heart of the city. Plans have been prepared, and a contract let to Messrs. Parks, Tupper and Kirkpatrick at a price of \$20,450 for the grading of the lot and the construction of a creosoted pile wharf, of "L" shape, having 420 feet frontage. This work, when completed, will relieve a long-standing congestion in this important centre. The site of the wharf has been dredged by the Department of Public Works to give a berth with a least depth of 20 feet.



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At the St. John, N.B., depot, the work has made satisfactory progress, the main walls of the principal wharf having been completed, but the northeast corner and the filling remain to be done. All dredging of the berth is also completed to 20 feet at low water. The necessary buildings for this depot are now being designed.

In addition to the original contract, the filling-in of the shore ends of the wharf has been allotted to the same firm at a price of about \$31,300, figures being based on original contract rates.

The changes and additions contemplated to the Prescott depot have been duly carried out, within the original estimate, and the old starch-works building is now a first-rate machine and carpenter shop and storehouse in which the departmental manufacturing and shipping is being done with great success and satisfaction. The changes were made under the direction of Mr. F. P. Jennings, of my staff, and I desire to express appreciation of his good services and satisfactory designing.

## REMOVAL OF OBSTRUCTIONS.

During the past twelve months the following work has been done, under the annual appropriation for the removal of wrecks and obstructions:—

Two wrecks, the *Douglas* and *Monguagon* in the Detroit river near Windsor, Ont., were removed by Captain W. B. Spears, of Windsor, under contract for the sum of \$400.

The steamer *City of London* was wrecked this year in lake Erie, near Amherstburg, and will be removed next year, the cost of lighting the same being \$637.

The tug *Maxwell* was left in a sinking condition in the harbour at Port Stanley. The cost of preventing the same from being a menace to navigation, being \$54.03, will be collected from the owner.

Two sunken dump scows and the hulk of an old side-wheel steamer *William*, which were lying across the channel leading into the harbour at Valleyfield, were removed by this department at a cost of \$89.60.

A number of small expenditures, such as tug hire, advertising, and incidental expenses were incurred, and the total amount expended this year of the vote for removal of wrecks is \$1,365.56.

## ICE-BREAKING.

1. The Canadian Towing and Wrecking Company, Limited, of Port Arthur, contracted with the department to keep the harbours of Port Arthur, Fort William, and West Fort William open for navigation until December 17, 1913, and to open those harbours in the spring of 1914 in time to admit upward-bound vessels to enter the harbours as soon as the Sault Ste. Marie canal should be open for navigation. The contract price was \$19,250, which included an agreement to remove all light-keepers in the vicinity from their stations at the close of navigation in 1913.

2. Early in the spring of 1913, strong representations were made to the Department of Marine and Fisheries that an early opening of navigation would be of great benefit to the country, and that owing to the exceptional strength of the ice in the Soo river and Whitefish bay, ice-breaking operations should be carried on. My chief assistant was immediately sent to the locality to investigate conditions and report. After careful inquiry he recommended in favour of work being done, and the icebreaking steamer *St. Ignace* was procured and successfully carried out the work. This proved heavier than anticipated. The work started on the morning of the 16th April, and the upward and downward fleets met at Whitefish bay on the morning of the 23rd and were passed. Owing to the heavy ice the breaker was kept at work for two days longer. The total cost of the work was \$9,800, and this incidentally covered the breaking of the ice from Detour to Sault Ste. Marie, advancing the season at the Soo by at least two weeks. Mr. Fraser reported that from the best information obtainable it appeared that some \$60,000,000 worth of Canadian



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grain was tied up at the head of lake Superior, and that a considerable portion of this was in danger of deterioration, that by prompt moving of the grain the value of the same would immediately become available for use in Western Canada, that the heavy storage charges would be reduced, that the large fleet of boats lying idle would be relieved for other transportation purposes where they were urgently required. Another element was the urgent need of coal in the western country. Owing to unprecedented shortage of cars in the previous autumn the orders placed could not be filled, and there was an unusual dearth of fuel.

It is of course impossible to say to what extent the opening of navigation was advanced by the work, but if this were only one day the expenditure would be amply justified.

3. A contract was entered into with S. Shipman, of Sault Ste. Marie, Ont., to keep free from ice the channel between Kensington point, on the north shore of St. Joseph channel, and a convenient landing on St. Joseph island or Campement d'Ours island, the work beginning in the autumn of 1913 and continuing until the ice had formed to sufficient thickness to permit teams of horses to cross in safety. The work also included the breaking of a channel in the spring before the ice became dangerous, and keeping the channel free until general navigation was resumed. The contract price was \$500.

4. The usual contribution of \$300 was made towards keeping open the St. Croix river in the vicinity of St. Stephen. The annual cost of this work is in the neighbourhood of \$1,000 and the department of late years has contributed \$300 a year towards this, the remainder being made up locally.

Respectfully submitted,

WM. P. ANDERSON, M.Inst. C.E.,

*Chief Engineer.*

CHIEF ENGINEER'S OFFICE,

DEPARTMENT OF MARINE AND FISHERIES,

OTTAWA, April 1, 1914.



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(Enclosure A.)

DETAILED REPORT OF THE CHIEF ENGINEER OF THE DEPARTMENT OF MARINE AND FISHERIES ON CONSTRUCTION, ESTABLISHMENT AND IMPROVEMENT OF LIGHTHOUSES AND OTHER AIDS TO NAVIGATION, UP TO MARCH 31, 1914.

To the Deputy Minister,  
Department of Marine and Fisheries,  
Ottawa.

SIR,—I have the honour to submit a detailed report on work done in the construction and establishment of aids to navigation, for the twelve months ending March 31, 1914.

This statement is put in tabular form, and includes all expenditures incurred during the year against the vote of one million dollars for construction, etc., and no work done chargeable to other votes.

NOVA SCOTIA.  
NEW AIDS TO NAVIGATION.

Lightstation.	Nature of the work.	How performed.	Contractor or foreman.	Expenditure during fiscal year.
				\$ cts.
Five Islands....	Erection of wooden lighthouse tower. Inspection and incidental expenses. ....	Contract.....	A. L. Mury, West Arichat.....	750 00
Ile Haute.....	Provision of a hand fog horn....	.....	.....	156 18
New Harbour...	Erection of a pole light with shed at base, having a lantern with hoisting gear....	Day labour .....	E. J. Geizer .....	262 31
Salvages .....	Erection of a fog-alarm building, dwelling, outbuilding, and installation of class "E" diaphone plant and type "G" diaphone.....	Day labour .....	J. L. Coulter .....	7,868 79
Tanner Island ..	Erection of wooden lighthouse tower, and installation of a 5th order lens....	Contract .....	A. L. Mury, West Arichat .....	728 00
	Inspection and incidental expenses. ....	.....	.....	46 87

CHANGES AND IMPROVEMENTS IN EXISTING AIDS.

Baccaro .....	Illuminating apparatus improved by the installation of a quadruple flash reflector with 85 mm. burner. ....	Day labour .....	E. J. Geizer....	75 63
Boars Head.....	Erection of a fog-alarm building. Expenses incurred on account of inspection and installation. ....	Contract .....	Denton & Condon, Digby .....	3,300 00
Brier Island ....	Illuminating apparatus improved by substituting a 3rd order quadruple flashing optic for the catoptric revolving apparatus. Lantern raised and repairs to tower. ....	Day labour.....	J. L. Coulter.....	2,312 35
	Repairs to dwelling and construction of a shed. ....	Day labour.. ...	E. Ellis... ..	.....
Burntcoat .....	Construction of a wooden lighthouse tower.....	Contract.....	O. J. O'Brien, Noel, N.S. ....	3,680 00
	Inspection and incidental expenses. ....	.....	.....	200 88



NOVA SCOTIA—Continued.

CHANGES AND IMPROVEMENTS—Continued.

Lightstation.	Nature of the work.	How performed.	Contractor or foreman.	Expenditure during fiscal year.
				\$ cts.
Chebucto Head.	Illuminating apparatus improved by the installation of a quadruple flash long focus reflector.	Day labour....	E. J. Geizer.....	1,940 26
	Installation of class "D" diaphone plant, and type "F" diaphone replacing steam whistle. ....	Day labour .....	E. J. Geizer.....	
Coffin Island....	Construction of an oil shed.....	Day labour.....	A. Wentzell.....	510 31
Devil Island....	Illuminating apparatus improved by substituting a 4th order dioptric lens in lieu of the catoptric apparatus. Work started last year. ....	Day labour.....	T. H. Phillips .....	12 48
Digby Pier.....	Illuminating apparatus improved by the installation of a 5th order dioptric lens. Work started last year .....	Day labour ....	W. Merson .....	17 80
Doctors Island, Eastern points	Increasing size of day beacons. Expenses <i>re</i> purchase of site.. ..			107 35
Freels Cape....	Construction of an air pipe and dam .....	Day labour .....	M. Myrick.....	590 97
George Island...	Illuminating apparatus improved by substituting a 4th order occulting dioptric lens, red light, in lieu of revolving catoptric apparatus. ....	" .....	T. H. Phillips.....	19 83
Green Island. (Cape Breton island).....	Illuminating apparatus improved by the installation of a double flash long focus reflector.....	" .....	F. L. Fultz.....	55 04
Halifax Light-ship	Construction of new lightship... Inspection, travelling and other expenses... ..	Contract.. ...	Row, McLachlan & Co., Paisley, Scotland.....	112,894 49 6,412 05
Jeddore Rock...	Illuminating apparatus improved by substituting a 4th order dioptric lens in lieu of catoptric apparatus. ....	Day labour .....	J. L. Colter.....	26 15
Mabou.....	Repairs to foundation of back range lighthouse.....	" .....	N. McPhee.....	232 67
Man-o-war.. ...	Expenses <i>re</i> purchase of site....			125 14
Mauger Beach..	Expenses in connection with the erection of double dwelling and boat-house. Work started last year .....			2,178 50
North Canso....	Illuminating apparatus improved by substituting a single flash long focus reflector with 35 mm. burner, in lieu of a fixed catoptric apparatus .....	Day labour .....	F. L. Fultz.....	28 80
Parrsboro.....	Repairs to cribwork.....	" .....	W. H. McCurdy.....	400 98
Peases Island...	Illuminating apparatus improved by the installation of a quadruple flash long focus reflector....	" .....	E. J. Geizer .....	79 65
Point Prim...	Illuminating apparatus improved by the installation of a single flash long focus reflector, with 55 mm. burner...	" .....		69 00
Portapique.....	Construction of a wooden light-house tower..... Inspection and incidental expenses .....	Contract.. ...	W. A. Lambard & A. Sharitt, Montrose....	925 00 38 00



## SESSIONAL PAPER No. 21

NOVA SCOTIA—*Concluded.*CHANGES AND IMPROVEMENTS IN EXISTING AIDS—*Concluded.*

Lightstation.	Nature of the work.	How performed.	Contractor or foreman.	Expenditure during fiscal year.
				\$ cts.
Pugwash . . . . .	Cribwork protection around lighthouse . . . . .	Day labour . . . . .	C. E. Woodlock . . . . .	530 33
Scatarie . . . . .	Erection of lantern and alterations to tower, and illuminating apparatus improved by the installation of a 2nd order triple flash optic with 55 mm. burner. (Will be completed 1914-15). . . . .	" . . . . .	E. J. Geizer . . . . .	67 23
Seal Island . . . . .	Installation of duplicate boiler. . . . .	" . . . . .	T. H. Phillips . . . . .	647 94
Sheet Rock . . . . .	Illuminating apparatus improved by substituting a fourth order dioptric lens for catoptric apparatus . . . . .	" . . . . .	F. L. Fultz . . . . .	19 40
Wedge-Island . . . . .	Extension to cribwork . . . . .	" . . . . .	E. Burns . . . . .	1,214 90
West Ironbound . . . . .	Illuminating apparatus improved by the installation of quadruple flash long focus reflector with 35 m.m. burner . . . . .	" . . . . .	F. L. Fultz . . . . .	5 48
Whitehead . . . . .	Construction of fog-alarm building, dwelling, oil store and small bridge. . . . .	Contract . . . . .	Freeman & Giffin, Isaac's Harbour, N.S. . . . .	6,945 00
	Inspection, installation of class 'D' diaphone plant and type 'E' diaphone, and incidental expenses . . . . .			1,268 46
Miscellaneous Expenses . . . . .	Materials, &c., in connection with the establishment of buoys, beacons, submarine bells, &c. . . . .			19,781 33
	Travelling expenses of officials, telegrams, salaries of foremen, &c. . . . .			11,677 92
	Total expenditure for Nova Scotia . . . . .			188,918 75

## NEW BRUNSWICK.

## NEW AIDS TO NAVIGATION.

Bay of Fundy . . . . .	Erection of spindles at Sandy point and Tinker ledge . . . . .	Day labour . . . . .	G. N. Breen . . . . .	74 67
Bayswater . . . . .	Erection of a wooden light-house tower and installation of fog bell and 5th order dioptric lens. Inspection and incidental expenses . . . . .	Contract . . . . .	B. R. Palmer, Tennant's Cove. (Contract price \$825.00). . . . .	883 25
Chamcook . . . . .	Erection of a 27-foot wooden light-house tower and installation of a 4th order dioptric lens . . . . .	Day labour . . . . .	C. N. Breen, D. J. Gallagher . . . . .	1,341 04
Chockfish . . . . .	Erection of a pole light with hoisting apparatus and shed . . . . .	" . . . . .	I. Robichaud . . . . .	132 69
Grande Anse . . . . .	Erection of a wooden light-house tower and installation of a 6th order dioptric lens. Will be completed 1914-15. Inspection and incidental expenses . . . . .	Contract . . . . .	The Geo. Eddy Co., Bathurst, N.B. (Contract price \$800). . . . .	857 78



NEW BRUNSWICK—Continued.  
NEW AIDS TO NAVIGATION—Con.

Lightstation.	Nature of the work.	How performed.	Contractor or foreman.	Expenditure during fiscal year.
				\$ cts.
Leonardville....	Erection of a wooden lighthouse tower and installation of a 6th order dioptric lens.. . . .	Contract.. . . .	A. L. Mury, West Arch- ichat, Contract price \$896.....	1,109 69
McColgan Point.	Erection of a wooden lighthouse tower and installation of a 6th order dioptric lens.....	" .....	B. R. Palmer.....	700 00
	Inspection and incidental ex- penses. ....	.....	.....	51 05
St. John.....	Construction of a pile and con- crete wharf and dredging, will be completed 1914-1915.....	Contract.....	F. L. Boone .....	113,650 66
	Inspection and incidental ex- penses .....	.....	.....	3,145 67
Shampier Wharf	Erection of a wooden lighthouse tower and installation of a 6th order dioptric lens.....	Contract.....	B. R. Palmer. ....	1,049 00
	Inspection and incidental ex- penses.....	.....	.....	42 76
Shippigan ...	Provision and erection of a wharf lantern .....	Day labour.....	Geo. Breen.....	116 97
Splitting Knife Ledge.....	Erection of an iron spindle... ..	" .....	" .....	58 69

CHANGES AND IMPROVEMENTS IN EXISTING AIDS.

Barn Island.....	Reconstruction of spindle.....	Day labour.....	G. N. Breen.....	89 24
Caraquet.....	Provision and erection of a wharf light .....	" .....	" .....	128 38
Casco Bay.....	Erection of spindle.....	" .....	" .....	306 47
Cocagne .....	Expenses <i>re</i> purchase of site.....	.....	.....	132 25
Cox Point.....	Expenses <i>re</i> purchase of site. . .	.....	.....	150 00
Gannet Rock....	Extensive repairs and improve- ments....	Day labour.....	J. Henderson... ..	10,622 60
	Installation of an electric light- ing plant.....	" .....	F. J. Lewis.....	89 40
Half Tide Rock.	Repairs to spindle.. . . .	.....	.....	140 00
Hendry Point...	Expenses <i>re</i> purchase of site.....	.....	.....	
Jourimain Cape.	Illuminating apparatus improved by the installation of a 4th order dioptric lens.....	Day labour.....	D. J. Gallagher.....	
Lepreau Point..	Installation of an electric light- ing plant.....	" .....	F. Frauley.....	191 11
Long Eddy Point	Installation of an electric light- ing plant.....	" .....	Lightkeeper ..	166 94
Lords Cove.....	Construction of wooden cribwork and erection of iron spindle....	" .....	G. N. Breen,..	246 74
Lurcher Shoal Lightship.....	Repairs.....	Contract... ..	C. R. Reid.....	655 00
Machias Seal Island.....	Extension improvements. ....	Day labour... ..	J. Henderson, Engineer in charge.....	6,745 87
	Demolishing old buildings, alter- ation to fog-alarm building and substitution of class "E" dup- licate plant with type "G" diaphone in lieu of steam fog- whistle previously maintained. Provision of fog-alarm machinery	Furnished under general con- tract.....	Canadian Fog Signal Co., Toronto .....	9,463 16



## SESSIONAL PAPER No. 21

NEW BRUNSWICK—*Concluded.*CHANGES AND IMPROVEMENTS IN EXISTING AIDS—*Concluded.*

Lightstation.	Nature of the work.	How performed.	Contractor or foreman.	Expenditure during fiscal year.
				\$ cts.
Musquash.....	Expenses <i>re</i> purchase of site.....			45 00
Outhouse Point.	" " " ".....			42 29
Partridge Island	Installation of an electric lighting plant.....	Day labour.....	F. Lewis.....	1,436 99
St. John Harbour	Capacity of reservoir increased..	" .....	F. Nice.....	
	Provision of a steel skeleton tower for lighthouse, (Will be completed 1914-15). .....	Contract .....	New Burrell-Johnson Iron Co., Yarmouth...	1,200 00
	Incidental expenses preparatory to erection, etc.....			8 67
Spencer Cape...	Installation of an electric lighting plant .....	Day labour.....	F. J. Lewis.....	186 97
Swallowtail.....	Erection of fog-bell and construction of building. Will be completed next year, 1914-15..	" .....	G. N. Breen.....	79 33
Tongue Shoal...	Repairs to concrete wall.....	" .....	G. N. Breen.....	26 70
Miscellaneous Expenses.....	Materials, etc., in connection with the establishment of buoys, beacons, spindles, etc.....			16,847 10
	Travelling expenses of local officers, salaries of erectors, telegrams, etc.....			4,476 98
	Total expenditure for New Brunswick... ..			177,038 72

## PRINCE EDWARD ISLAND.

## NEW AIDS TO NAVIGATION.

Belle River.....	Erection of a wooden skeleton tower and installation of a 6th order dioptric lens. Work started last year.....	Day labour.....	G. L. Gaudin.....	25 99
Shipwreck Point	Erection of a combined wooden dwelling and lighthouse and the installation of a 4th order dioptric lens. ..	Contract.. ..	The Annandale Lumber Co., Annandale.....	3,213 81
	Inspection and incidental expenses.....			255 30
Fish Island.....	Construction of a board fence as protection from erosion.....	Day labour.....	G. L. Gaudin.....	69 62
Indian Point....	Repairs to lighthouse.....	" .....	F. W. Peters. ....	182 95
Summerside ....	Purchase of site and moving back light .....	" .....	G. L. Gaudin... ..	587 37
Miscellaneous Expenses.....	Travelling and incidental expenses. ....			2,826 53
	Total expenditure for Prince Edward Island.....			7,186 57



QUEBEC.

NEW AIDS TO NAVIGATION.

Lightstation.	Nature of the work.	How performed.	Contractor or foreman.	Expenditure during fiscal year.
				\$ cts.
St. Louis Isle...	Erection of a steel skeleton tower and installation of gas plant..	Day labour.....	F. E. Cote.....	687 49
St. Marys Isle..	Completion of work of constructing concrete tower dwelling and installation of a 4th order dioptric lens.....	" .....	F. E. Cote.....	459 00
Seven Islands...	Erection of a pole with hoisting gear for Chance anchor lens lantern.....	" ...	D. Bilodeau. ....	109 86
Trinity Bay....	Erection of a steel skeleton tower and installation of gas plant..	" .....	F. G. Cote.....	600 99
Coacoachoo Isd.	Erection of beacon.....	.....	.....	67 50
Ferolle Point...	Completion of the construction of concrete tower; installation of fog-alarm machinery and illuminating apparatus consisting of a 3rd order dioptric lens	Day labour.....	{ F. E. Cote. . . . }	6,498 35
Flat Island.....	Completion of the construction of concrete tower; outbuildings, and the installation of a 4th order dioptric lens.....	" .....	{ E. Lavergue. }	
Lampson Cove..	Lantern to mark cribs, and incidental expenses.....	.....	{ D. Bilodeau..... }	308 40
Méchins Wharf.	Erection of mast with hoisting gear for Chance anchor lantern with shed at base. Will be completed, 1914-15.....	.....	{ F. Parent. }	20 45
Natashkwan....	The construction of concrete tower, dwelling, oil store, boat-house, and installation of a triple flash 4th order lens. Will be completed next season	Day labour.....	Transcontinental Ry....	12 08
Passe Pierre Islets.....	Erection of a steel skeleton tower and installation of gas plant..	" ...	C. Carbonneau.. ..	5,415 62
Rivière du Moulin.....	Purchase of lighthouse sites.....	.....	F. E. Cote.....	567 62
Ste. Félicité....	Installation of diaphone.....	Day labour.....	E. Poitras.....	138 01
				36 40

CHANGES AND IMPROVEMENTS IN EXISTING AIDS..

Amherst.. .....	Search <i>re</i> site.....	.....	.....	1 80
Algernon Rock..	Repairs to concrete lining around pier of back light .....	Day labour.....	G. Fortin.....	26 70
Anguille Cape..	Repairs to dwelling, and improvement to drainage will be completed next year, 1914-1915.	" .....	Lightkeeper .....	898 73
Arctic .....	Fitted up as lightship to be used at Lower Traverse.....	" .....	J. Hamel . . . . .	6,008 58
Barachois de Malbaie .....	Moving oil shed and erecting new mast... ..	Contract.. . . .	T. Maloney .. . . .	45 00
Belle Isle, N.E..	Repairs to concrete wharf .....	Day labour .....	D. Bilodeau .....	172 20
Belle Isle, S.W.	Repairs to dwelling, etc....	" .....	D. Bilodeau .....	5,109 28
Brandy Pots....	Registration of plan of site .....	.....	.....	1 30
Cloridorme.....	Removing light-tower location..	.....	.....	15 80
Cape d'Espoir...	Illuminating apparatus improved by installation of a quadruple flash long-focus reflector with 35-inch burner .. ..	Day labour.....	.....	12,440 47
	Erection of a fog-alarm building, dwelling, oil store. Inspection and incidental expenses .....	.....	.....	



## SESSIONAL PAPER No. 21

QUEBEC—*Concluded.*CHANGES AND IMPROVEMENTS IN EXISTING AIDS—*Concluded*

Lightstation.	Nature of the work.	How performed.	Contractor or foreman.	Expenditure during fiscal year.
				\$ cts.
Cape d'Espoir...	Installation of class D duplicate diaphone plant and type F diaphone .....	Day labour. ....	J. Montgomery .....	
Etang du Nord..	Repairs to dwelling .....	" .....	Lightkeeper .....	46 12
Father Point...	Moving gate and old oil shed. Construction of line fence.....	Day labour.....	Lighthouse-keeper .....	268 50
Grand Entry....	Protection work for backlight pier .....	" .....	A. Turbide... ..	316 01
Green Island...	Illuminating apparatus improved by the installation of a 4th order catadioptric lens.....	" .....	R. L. Kelso.....	227 74
Kamouraska....	Construction of a dwelling and two sheds, work started last year.....	Contract.....	Lachance & Fils, Fraser-ville, \$875 balance of contract.	994 58
Nicolet .....	Deed of sale of light house site.. ..			63 60
Cape Norman...	Repairs to fog-alarms, etc .....	Day labour.....	E. Poitras.....	369 08
Perroquet Island	Legal expenses <i>re</i> site.....			150 00
Pointe d'Amour.	Steam fog-alarm plant replaced by an oil plant, and provision of six compressors. Engines will be completed 1914-15... ..	Day labour.....		278 58
Pointe à Basile Range . . . . .	Illuminating apparatus improved by installing of reflectors and 35-inch. burners. Will be completed 1914-15.....	" .....		1,160 45
Pointe aux Trembles. . . . .	Illuminating apparatus improved by the installation of a long-focus reflector . . . . .	" .....	F. Parent .....	87 23
	Lantern lined by tin.....	" .....	P. Gagnon.....	
Portneuf-en-bas.	Placing battens as a day mark on two sides of tower .....	" .....	E. Tremblay .....	309 94
S.W. Point, Anticosti.....	Illuminating apparatus improved by the installation of a single-flash, long focus reflector with 55-inch burner; will be completed 1914-1915.. ..	" .....		
Stone Pillar ....	Construction of oil shed. Repairs to lighthouse .....	" .....	G. Fortin .....	691 19
Upper Traverse Pier....	Repairs .....	" .....	P. Poulin.....	7,647 62
Miscellaneous expenses.....	Materials, etc., in connection with the establishment of buoys, beacons, submarine bells, etc. Expenses incurred by the workshops, including wages, material, power, etc., the salaries of erectors, wages and travelling expenses of local officers, telegrams, and general upkeep of agency. . . . .			30,661 68
	Total expenditure for Quebec...			93,423 21



MONTREAL DISTRICT.

NEW AIDS TO NAVIGATION.

Lightstation.	Nature of the work.	How performed.	Contractor or foreman.	Expenditure during fiscal year.
				\$ cts.
Beloeil Bridge ..	Erection of a pole with gear for hoisting a pressed lens lantern, with shed at base .....	Day labour . . .	P. Beauchemin .....	44 70
Bouchard Penin- sula.....	Erection of steel skeleton towers as a range, and the installation of catoptric illuminating appar- atus .....	" .....	J. D. Weir, superintend- ent.....	2,295 18
Lebel.....	Erection of steel skeleton towers as a range, and the installation of catoptric illuminating appar- atus . . . . .	" .....	.....	1,858 56
Mousseau.....	Erection of steel skeleton towers as a range, and the installation of catoptric illuminating appar- atus.....	" .....	.....	1,577 30
St.SulpiceCourse	Erection of a wooden tower for the front light and a steel skeleton tower for the back light, and the installation of catoptric illuminating appar- atus.....	" .....	.....	1,048 82
St. Sulpice Tra- verse.....	Erection of a wooden tower for the front light and a steel skeleton tower for the back light, and the installation of catoptric illuminating appar- atus.....	.....	.....	1,097 87
St. Denis.....	Construction and placing a light float .....	Day labour.....	P. Beauchemin. ....	79 71
St. Roch....	Erection of two lighted beacons with slatted day marks, and in- stallation of reflector lanterns.	" .....	P. Beauchemin.....	235 11

CHANGES AND IMPROVEMENTS TO EXISTING AIDS.

Crab Island.....	Expenditure in connection with purchase of sites.. ..	.....	.....	60 56
Grondines .....	Steel tower closed in by boards, removal of lantern and install- ation of apparatus .....	Day labour.....	P. Mandeville.....	377 44
Isle Ronde .....	Sheathing living room .....	" .....	C. J. Hartley.....	106 24
Isle St. Therèse.	Purchase of site .....	.....	.....	184 60
Lachine .....	Repairs to lighthouse and pier..	Day labour.....	T. Weir.....	249 43
L'Orignal Wharf	Installation of an electric light on the wharf. ....	" .....	T. Weir . . . . .	35 39
Petite IsleCourse	Installation of two Piper head- light lanterns .....	.....	.....	
Pointe à la Meule	Re-erection of wooden front light tower and the erection of a 3- section steel skeleton tower, and the installation of catoptric illuminating apparatus work started last year. ....	Day labour.....	P. Beauchemin.....	1,942 22
Pointe au Chêne	L'Orignal lighthouse moved to Pointe au Chêne, and the in- stallation of a 6-inch order dio- ptric lens .. . . .	" . . . .	P. Beauchemin.....	976 49
Pointe du Lac ..	Front lighthouse foundation pier raised.....	" .....	P. Beauchemin.....	295 15



## SESSIONAL PAPER No. 21

MONTREAL DISTRICT—*Concluded.*CHANGES AND IMPROVEMENTS TO EXISTING AIDS. —*Concluded.*

Lightstation.	Nature of the Work.	How Performed.	Contractor or Foreman.	Expenditure during Fiscal Year.
				\$ cts.
Port St. Francis	Repairs to foundation of light-house .....	Day labour.....	P. Beauchemin....	53 00
Repentigny.....	Moving range lights to new sites and purchase of sites.....	" .....	J. D. Weir.....	1,101 59
Richelieu River.	Providing concrete basis for 21 pole lights.....	.....	J. D. Weir, supervisor. .	1,420 99
Ste. Anne de Sorel.....	Purchase of site and legal expenses.....	.....	.....	157 50
St. Ours Locks Traverse.....	Purchase of site.....	.....	.....	35 50
St. Francis river.	Purchase of sites... ..	.....	.....	121 00
Way shoal.....	" " .....	.....	.....	19 30
Steamers, scows, etc., used on construction work. ....	Repairs, fittings to boats, pay and board of crews of the following craft: <i>Hosanna, Adelaar, Alpha, Lenore, Napoleon, Quebec</i> and <i>Sarah</i> .....	.....	.....	14,005 09
Miscellaneous Expenses.....	Materials, etc., in connection with the establishment of buoys and beacons. ....	.....	.....	9,954 09
	Travelling expenses of officers, wages, salaries of temporary help, and general upkeep of agency.....	.....	.....	13,195 36
	Total expenditure in Montreal agency .. .	.....	.....	52,528 19

## ONTARIO—INCLUDING NORTHWEST PROVINCES.

## NEW AIDS TO NAVIGATION.

Devil's Gap.....	Expenses in connection with site .....	.....	.....	15 00
McNicol.....	Erection of a 27-foot wooden lighthouse tower for the front light and construction of a concrete base for back tower ..	Contractor.....	J. Erven, Midland .....	1,800 00
	Inspection and incidental expenses.	.....	.....	.....
	Erection of a 2-section steel skeleton tower for back light and the installation of catoptric apparatus for back light. Work started last year. ...	Day labour....	T. H. Brewer .....	1,314 54
Main Duck Island.....	Erection of a 70-foot concrete tower, double dwelling, out-buildings, boathouses, oilshed, wharf and boat landing. . . .	Contract.....	A. T. G. McMaster, Toronto, contract price \$1,700 .....	5,315 27
	Will be completed 1914-1915. Inspection and incidental expenses.	.....	.....	.....
Mission Channel.	Erection of range poles with slatted day marks attached, carrying electric catoptric apparatus.. ..	Day labour.....	M. J. Egan.....	637 22



5 GEORGE V., A. 1915

## ONTARIO—Continued.

## NEW AIDS TO NAVIGATION.—Continued.

Lightstation.	Nature of the Work.	How Performed.	Contractor or Foreman.	Expenditure during Fiscal Year.
				\$ cts.
New Channel, Red River....	Erection of a 27-foot wooden lighthouse tower on pile foundation, and a 2-section steel skeleton tower on pile foundation; also small dwelling and installation of a 4-inch order dioptric lens for the front light, and a catoptric apparatus for the back light. ....	Day labour.....	M. J. Egan.....	3,091 29
Port Burwell. . .	Construction of a concrete beacon; will be completed 1914-15.	Day labour.....	G. W. Perkins.....	1,380 01
Port Stanley....	Installation of a 1-inch diaphone operated by electricity .....	Day labour.....	H. V. Anderson, engineer in charge.....	1,683 79
Skelton Island..	Erection of a steel skeleton tower with self-generating gas plant.. . . . .	" .....	J. J. Lindsay.....	
Southeast Bend.	Erection of five pole lights supported on pile foundations, and installation of self-generating gas plant.....	" .....	M. J. Egan.....	3,357 69
Amherstburg....	Repairs to wharf at depot .....	" .....	M. J. Egan.....	147 11
Battle Island. . .	Provision of oil tanks for projected fog-alarm, and registration fees in connection with site.....	Contract.....		278 05
Cove Island... .	Construction of landing wharf..	" .....	W. J. Simpson.....	697 47
Cobourg. . . . .	Repairs to fog-alarm plant.....	.....		11 56
Deep River.....	Erection of a 27-foot wooden lighthouse tower, and the installation of a 6-inch order dioptric lens.....	Contract.....	C. L. McCool, Fort William.....	525 27
Gargantua . . . .	Provision of materials for repairs to lighthouse. . . . .	.....		41 03
Gibraltar Point.	Erection of an oil shed. ....	Day labour.....	T. H. Brewer.....	132 40
Goderich. ....	Protection work for back range tower.....	Contract.. ..	B. C. Cummings, Goderich	107 00
	Tower raised, repairs, and the installation of new lantern and a double-flash long-focus reflector for main light. Will be completed next year.....	Day labour.....	{ M. J. Egan..... } { J. Haggarty..... }	799 80
	Provision and installation of a Piper headlight lantern for front range light. ....	" .....	W. Robinson.....	
Gore Bay.....	Repairs to keeper's dwelling....	" .....	T. H. Brewer.....	858 53
Great Duck Island.....	Erection of a new boat-house and slip.....	" .....	T. H. Brewer.....	873 26
Jackstraw Shoal	Repairs to lighthouse cribwork foundation; will be completed 1914-15.....	" .....	J. J. Lindsay.....	60 00
Jones Islands...	Registration fees <i>re</i> site .....	.....		3 06
Limekiln Crossing.....	Reconstruction of front tower...	Day labour.....	M. J. Egan.....	95 68
Lionhead..... .	Erection of a wooden lighthouse tower, and the installation of a 5-inch order lens.....	Contract.....	J. C. Kennedy, Owen Sound, \$825.22.....	966 22



## SESSIONAL PAPER No. 21

## ONTARIO—Continued.

## NEW AIDS TO NAVIGATION.—Continued.

Lightstation.	Nature of the Work.	How Performed.	Contractor or Foreman.	Expenditure during Fiscal Year.
				\$ cts.
Lionhead. ....	Inspection and incidental expenses.....			
	Salving lighthouse .....	Contract.....	J. H. Tyndall, \$50 .....	
	Erection of a stanchion for life line, and provision of a fender for wharf .....	Day labour.....	Lightkeeper .....	
Little Current..	Erection and provision of a higher pole for the back range light. ....	" .....	" .....	8 83
Michipicoten Island .....	Repairs to lighthouse.....	" .....	M. J. Egan .....	271 79
Midland Point..	Erection of a 43-foot wooden lighthouse tower for the back light, and removal of the wooden lighthouse tower of the backlight of the old range and used as the front light of the new range; also the installation of the apparatus taken from the old range.....	" .....	T. H. Brewer.....	2,388 22
Morris Island...	Erection of a shelter shed.....	Contract.....	Charles Simpson .....	125 00
Nine Mile Point	Illuminating apparatus improved by the installation of triple-flash long-focus radiator ...	Day labour...	J. Montgomery.....	162 91
Parry Sound Agency .....	Double sheeting carpenter shop. Installation of electric lighting system.....	" .....	J. Fitzpatrick.....	137 60
	Provision of office room for foreman ..	" .....	" .....	
Penetanguishene	Buoying of inner channel. ....	" .....	C. G. S. Lambton.....	199 52
Pie Island.....	Erection of boathouse.....	" .....	M. J. Egan.....	236 04
Port Dalhousie..	Repairs to foundation of engine bed.....	" .....	J. Montgomery.....	1,327 36
	Protection work and erection of oil shed .....	" .....	W. Langstaff .....	
Port Elgin....	Repairs to cribwork and construction of walk.....	Day labour.....	R. N. Lowry.....	24 45
Prescott.....	Rearrangement of the lighthouse depot, consisting of overhauling and repairing main building, tearing down and removal of various old buildings on the site, general overhaul of the machinery, electric lighting and sprinkling system, building of oil store, establishment of tramway, telephone system, repairs to wharf, construction of fences and gates, installation of a travelling crane, etc. ....	" .....	F. P. Jennings, supervisor.....	87,829 68
	Material purchased for stock to be transferred and charged to the several lightstations, the pay of staff and up-keep of depot.....	" .....	" .....	52,549 56
Presqu'île.....	Repairs to cribwork.....	" .....	M. J. Egan.....	184 53
Rainy River....	Protection work at front light...	" .....	J. Nash, supervisor .....	420 00



ONTARIO—*Concluded.*NEW AIDS TO NAVIGATION — *Continued.*

Light Station.	Nature of the Work.	How Performed.	Contractor or Foreman.	Expenditure during Fiscal Year.
				\$ cts.
Red Horse Rock	Erection of a new dwelling. Completed 1914-15.....	Day labour.....	J. J. Lindsay.....	8 00
Red Rock .....	Wooden windows replaced by iron windows and shutters, repairs to roof, &c.....	" .....	B. Dungan.....	364 68
Sault Ste. Marie	Purchase of sites, &c.....	.....	.....	303 20
Selkirk, Man...	Electric lighting of wharf with five lights and erection of poles and wires .....	Contract.....	Willson Lighting Co., Winnipeg.....	679 00
Slate Islands....	Provision of a class C diaphone plant and type F diaphone. Will be installed next year. Purchase of oil tanks and incidental expenses.....	Furnished under general contract.....	Can. Fog Signal Co., Toronto.....	4,889 53
Scotch Bonnet..	Registration of deed of site.....	.....	.....	1 40
Southeast Shoal Lightship.....	Installation of electric lighting system .....	Contract.....	Detroit Shipbuilding Co., Detroit .....	966 39
Stag Island.....	Repairs to pier .....	Day labour.....	M. J. Egan.....	55 45
Stokes Bay.....	Construction of a boat-house....	" .....	T. H. Brewer.....	321 48
Thunder Cape..	Illuminating apparatus improved by the installation of a single-flash long-focus reflector.....	" .....	M. J. Egan .....	3,191 14
	Erection of a concrete smoke-stack .....	} Day labour...	.....	3,191 14
	Construction of a boathouse and skidway .....			
Wilson Channel.	Moving back range tower a few feet westward.....	Day labour.....	M. J. Egan.....	273 61
	Erection of small dwelling ...	Contract.. ....	G. Langstaff. . . . .	300 00
Miscellaneous expenses .....	Materials, &c., in connection with the establishment of buoys and beacons. ....			
	Travelling expenses of officers, salaries and expenses of temporary help, erectors, &c.....	.....	.....	9,163 25
	Total expenses in Ontario.....	.....	.....	196,092 42

## BRITISH COLUMBIA.

## CHANGES AND IMPROVEMENTS IN EXISTING AIDS.

Addenbrooke...	Erection of a combined light-house and dwelling, boat-house, oil shed and the installation of a 4-in. order dioptric lens.....	Day labour.....	D. McLean.....	6,446 44
Aiskin Island...	Erection of acetylene beacon on concrete base.....	" .....	Crew of C.G.S. Quadra..	29 24
Greene Point...	Erection of acetylene beacon on concrete base....	" .....	" .....	347 75
Langara.....	Completion of the erection of a 30-foot concrete tower, dwelling, building, &c.....	" .....	D. McLean.....	11,019 05



## SESSIONAL PAPER No. 21

## BRITISH COLUMBIA—Continued.

## CHANGES AND IMPROVEMENTS IN EXISTING AIDS—Continued.

Lightstation.	Nature of the Work.	How Performed.	Contractor or Foreman.	Expenditure during Fiscal Year.
				\$ cts.
Masset.. . . .	Erection of a 27-ft. wooden light-house tower for the front light, and 62-ft. steel skeleton tower for back light, and the installation of a catoptric apparatus for the front light and a 4-inch order dioptric lens for the back	Day labour.....	L. Cullison . . . . .	2,619 36
Pillsbury Point.	Erection of a wooden frame work tower and installation of fog-bell.....	" . . . .	H. L. Hulbers . . . . .	263 13
Rose Spit.....	Erection of an unwatched acetylene beacon on concrete foundation . . . . .	" . . . .	Crew of C.G.S. Quadra..	319 17
St. James Cape.	Erection of a 44-foot reinforced concrete tower, wooden dwelling, oil store, boat-house, and installation of 3rd order dioptric lens.....	Day labour.....	R. Chrystal.....	18,114 08
Triple Island. . .	Erection of acetylene beacon on concrete base . . . . .	" . . . .	Crew of C. G. S. Quadra.	45 92
Victoria... . .	Expenses incurred in the acquisition of site for new marine depot, and preliminary work in connection with the construction of same . . . . .			842 05
Ballenas.....	Changes made in apparatus.....	Day labour.....	L. Cullison.....	64 76
Beale Cape.....	Erection of a wooden double dwelling.....	Contract.....	J. Charlesworth.....	7,033 30
Discovery Island	Erection of a wooden fog-alarm building. . . . .	Contract.....	W. H. Rourke.....	2,950 00
	Inspection and incidental expenses.....			1,024 53
	Provision and installation of a class 'D' duplicate plant and type 'E' diaphone. . . . .	Day labour; machinery ordered under general contract. . . . .		
Estevan.....	Construction of boat-house and boatway . . . . .	Day labour....	H. T. Peter, Canadian Fog Co., Toronto. ....	6,600 00
False Creek.....	Erection of a concrete electric-lighted beacon . . . . .	Contract.. . . .	Lightkeeper.....	289 87
	Inspection and incidental expenses. . . . .		W. H. Rourke.....	1,600 00
First Narrows . .	Erection of a wooden combined lighthouse and fog-alarm building on concrete foundation . . . . .	Contract.. . . .		141 42
	Inspection and incidental expenses. . . . .		J. W. Scott. . . . .	4,987 00
	Illuminant improved by the installation of a 5th order dioptric lens. . . . .	Day labour.....	H. T. Peter.....	1,727 47
	Fog-bell replaced by a small diaphone plant. . . . .		H. T. Peter.....	1,690 89
Fraser River Lightship.....	Installation of a submarine bell apparatus, etc. Provision of submarine apparatus.....		Submarine Signal Co., Boston. . . . .	1,500 00
Lucy Island....	Land cleared of trees. . . . .	Day labour.. . .	Lightkeeper.....	987 90
Middle Ground..	Rebuilding beacon and driving five coppered poles.....	Contract.....	G. Sage & Son.....	600 00



BRITISH COLUMBIA—*Concluded.*

CHANGES AND IMPROVEMENTS IN EXISTING AIDS — *Continued.*

Lightstation.	Nature of the Work.	How Performed.	Contractor or Foreman.	Expenditure during Fiscal Year.
				\$ cts.
Mudge Cape....	Construction of a fence, repairs to concrete cellar floor, digging a ditch, laying pipes, and other minor work.....	Day labour.....		361 12
Portlock Point..	Expenses <i>re</i> purchase of site....			935 57
Prince Rupert..	Erection of rigging for handling of coal.....	Day labour.....	A. H. Johnson.....	7,013 92
	Enlarging dam.....	".....	H. L. Hulbert.....	
	Repairs and improvements to depot.....	".....	A. L. Johnson.....	
	Overhauling launch.....	".....		
	Installation and purchase of machinery and small repairs..	".....		
Prospect Point..	Repairs and improvements to boat landing.....	Contract.....	J. W. Scott.....	598 00
	Inspection and incidental expenses.....			30 95
Sisters....	Illuminating apparatus improved by the installation of a 4th order lens....	Day labour.....	L. Cullison.....	420 48
Miscellaneous Expenses.....	Materials, etc., in connection with the establishment of buoys, beacons, and submarine bells.....			
	Salaries of foremen, travelling expenses of local officers, etc..			16,442 94
	Total expenditure in British Columbia.....			124,008 18

HEADQUARTERS.

Miscellaneous Expenses. ....	Including travelling expenses of officers, blue print work, unforeseen expenses, photographic work, etc.....			\$ 10,981 55
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RECAPITULATION BY PROVINCES.

	\$ cts.
Nova Scotia.....	188,918 75
New Brunswick.....	177,038 72
Prince Edward Island.....	7,186 57
Quebec District.....	93,423 21
Montreal District.....	52,528 19
Ontario and Northwest.....	196,092 42
British Columbia.....	124,008 18
Headquarters.....	10,981 55
Grand Total Expended.....	850,177 59

WM. P. ANDERSON, M. Inst. C.E.,  
Chief Engineer.



SESSIONAL PAPER No. 21

## APPENDIX No. 2.

## ANNUAL REPORT OF THE COMMISSIONER OF LIGHTS.

To the Deputy Minister of Marine and Fisheries,  
Ottawa.

SIR,—I have the honour to submit the eleventh annual report of this branch. The principal work performed has been an extension of the gas buoy and beacon service throughout the various provinces, together with the maintenance of lights and other aids to navigation throughout the Dominion. The operations of the branch are set forth in tabular form in the following five enclosures, namely:—

*Enclosure No. 1.*—Statement by provinces, showing the number of lights of the several orders, lightships, lightboats, lightkeepers, fog-alarm stations, warning buoys, and submarine bells, during the fiscal year 1913-14.

*Enclosure No. 2.*—Statement showing the names of lightstations and lightkeepers, during the fiscal year 1913-14.

*Enclosure No. 3.*—Statement giving a complete list of stations at which gas buoys were in operation throughout the Dominion during the fiscal year 1913-14.

*Enclosure No. 4.*—Statement showing new buoys and beacons established during the fiscal year 1913-14.

*Enclosure No. 5.*—Statement by localities, giving the number of unlighted buoys, stakes and bushes, maintained throughout the Dominion during the fiscal year 1913-14.

In conclusion, I desire to express and record my appreciation of the able assistance rendered by my staff, and the untiring application to duty exhibited by each member. It would not have been possible to carry out the large and increasing amount of work which is devolving upon this branch without the co-operation of all the officers connected with it.

I have the honour to be, sir,

Your obedient servant,

J. G. MACPHAIL,

*Commissioner.*

OFFICE OF THE COMMISSIONER OF LIGHTS,  
DEPARTMENT OF MARINE AND FISHERIES,  
OTTAWA, March 31, 1914.



(Enclosure No. 1.)

STATEMENT, by provinces, showing the number of lights of the several orders, lightships, lightboats, lightkeepers, fog-alarin stations, warning buoys, and submarine bells.

	1st order lights.	2nd order lights.	3rd order lights.	4th order lights.	5th order lights.	6th order lights.	7th order lights.	Pressed lens lights.	Catoptric lights.	Electric bulb lights.	Total.	Lightships.	Lightboats.	Lightkeepers.	Fog-alarin stations only.	Diaphones.	Fogguns and bombs.	Foghorns and trumpets.	Fog whistles.	Sirens.	Fogbells.	Hand foghorns.	Hand fogbells.	Gasbuoys.	Whistling buoys.	Bellbuoys.	Submarine bells.
New Brunswick.....	....	2	4	14	12	15	64	10	36	1	158	1	1	128	4	9	....	6	2	....	4	20	....	26	4	17	2
Nova Scotia.....	4	4	10	29	21	32	66	25	98	5	294	2	....	272	2	18	1	2	4	....	6	57	....	36	20	52	4
Prince Edward Island.....	....	....	....	13	2	1	7	4	52	1	80	....	....	52	....	1	1	1	....	....	....	2	....	6	4	3	....
Quebec.....	5	7	15	17	7	16	45	22	81	1	216	5	....	164	1	22	7	1	4	1	....	21	3	54	1	3	5
Montreal.....	....	....	....	7	3	3	30	38	136	....	217	2	....	148	....	....	....	....	....	....	6	....	....	75	....	....	....
Ontario.....	....	6	7	39	16	21	121	41	88	2	341	1	....	194	....	26	....	1	3	1	6	38	....	103	....	4	1
Manitoba.....	....	....	....	2	2	....	4	....	3	7	18	....	....	7	....	....	....	....	....	....	....	4	....	....	....	....	....
British Columbia.....	5	1	5	8	11	4	67	24	6	6	137	1	....	75	4	22	....	1	....	....	10	8	....	19	1	3	1
Total.....	14	20	41	129	74	92	404	164	500	23	1,461	12	1	1,040	11	98	9	12	13	2	26	150	3	319	30	82	13

Besides the foregoing, the following number of lights are maintained on spar buoys, floats or piles:—

Caribou river, Saguenay river.....	1
Rideau river.....	133
Telegraph narrows, Bay of Quinte.....	6
Detroit river.....	37



## SESSIONAL PAPER No. 21

(Enclosure No. 2).

STATEMENT of lightstations and names of lightkeepers, etc., in the Dominion.  
NEW BRUNSWICK AGENCY.

Name of Station.	Name of Lightkeeper.	Appointed.	Salary.	
			\$	cts.
*Anderson Hollow breakwater.....	J. E. Moore .....	Jan. 16, 1911..	150	00
Bathurst range .....	G. C. Sutherland.....	Mar. 20, 1882..	320	00
Barnes point.....	C. W. Barnes.. ..	Aug. 16, 1911..	160	00
Bayswater.....	F. E. Currie.....	Dec. 31, 1913..	120	00
Belloni point.....	E. H. Egan.....	May 17, 1892..	220	00
Belyea point.....	Mrs. Westfield Day.....	Oct. 19, 1906..	140	00
*Big Shippigan.....	A. T. DeGrace.....	May 12, 1913..	320	00
*Bliss island.....	J. H. McLeod.....	Oct. 17, 1900..	600	00
Bon Ami point.....	Mrs. D. Arseneau (temporary)	.....	180	00
Bridges point.....	A. B. Bridges.....	Oct. 23, 1911..	130	00
Buctouche bar .....	J. P. Cormier .....	July 26, 1902..	320	00
Buctouche range.....	H. B. Robicheaux .....	June 21, 1884..	260	00
Buctouche inner range.....	D. O. Maillet.....	July 7, 1883..	260	00
Campbellton range.....	P. McLean.....	Dec. 11, 1912..	150	00
Caraquet island .....	G. Lantaigne.....	June 16, 1888..	320	00
Caraquet range (front) .....	J. O. Chaisson .....	May 11, 1912..	105	00
Caraquet range (back).....	P. A. Lantaigne .....	Mch. 27, 1913..	100	00
*Cassie point.....	Alfred Gallant.....	Jan. 28, 1914..	320	00
Cedars .....	J. E. Gagnon.....	May 4, 1912..	125	00
Cherry island fog bell.....	H. Chaffey.....	Aug. 7, 1903..	260	00
Chockfish.....	M. C. Caissie.....	April 8, 1913..	80	00
Cocagne range.....	D. Goguen.....	Oct. 14, 1907..	220	00
Cox point .....	A. McBaine.....	May 6, 1898..	140	00
Dalhousie island.....	H. A. McNeill.....	Aug. 17, 1880..	380	00
*Dipper harbour.....	F. Belmore .....	Mar. 12, 1895..	180	00
*Drews head .....	J. M. Eldridge .....	May 2, 1904..	380	00
Duck island, Big, fog alarm.....	R. Burnham .....	June 25, 1906..	880	00
Enrage, Cape, light and fog alarm .....	J. G. Barbour .....	May 11, 1888..	980	00
Escuminac, light and fog alarm.....	K. R. McLennan.....	May 7, 1892..	1,180	00
Fanjoy point.....	W. C. Kennedy.....	Jan. 17, 1912..	125	00
Flewelling landing .....	M. Flewelling.....	April 20, 1890..	140	00
*Folly point .....	A. P. Belliveau.....	June 23, 1905..	320	00
Fox island ranges.....	G. Mills.....	June 23, 1897..	320	00
Gagetown .....	C. Brooks.....	Mar. 20, 1912..	125	00
Gannet rock, light and fog alarm.....	A. Wilson.....	Dec. 3, 1912..	1,260	00
Glenwood.....	E. D. Whelpley.....	May 7, 1912..	85	00
Goose lake .....	C. Brune.....	Jan. 25, 1913..	320	00
*Grand harbour .....	F. J. Martin.....	Aug. 5, 1912..	540	00
Grant beach range.....	W. A. Davidson.....	April 3, 1909..	220	00
Great Salmon river.....	R. Connolly.....	Feb. 26, 1913..	80	00
*Green head.....	T. E. Looney.....	July 1886..	220	00
Greys point .....	B. F. McCutcheon.....	Mar. 6, 1907..	120	00
Grindstone island, light and fog alarm.....	E. C. Peck.....	April 27, 1912..	905	00
Gull cove .....	L. Frankland.....	Nov. 14, 1902..	140	00
Hampstead wharf.....	W. Vanwart.....	Mar. 20, 1912..	125	00
Harper point.....	J. H. Blakeley.....	July 30, 1910..	250	00
Hatfield point.....	O. E. Davis.....	Dec. 24, 1912..	120	00
Hay island range.....	J. Allain.....	May 21, 1895..	260	00
*Head harbour, light and fog alarm.....	C. D. Hilyard.....	May 5, 1907..	1,180	00
Hendry farm.....	A. M. Hendry.....	April 28, 1899..	140	00
Heron island .....	J. A. D. Robertson.....	April 1, 1902..	320	00
Jemseg.....	W. Sharp .....	Oct. 24, 1912..	125	00
Jourimain .....	A. J. P. Bent.....	Jan. 25, 1901..	440	00
Kouchibouguac ranges .....	H. Gogain.....	June 26, 1908..	260	00
Leonardville.....	Alonzo Conley .....	Dec. 20, 1913..	220	00
Lepreau, light and fog alarm.....	R. L. Belding (lightkeeper).....	June 30, 1905..	480	00
	F. Frauley (engineer).....	June 30, 1905..	960	00
Letite, light and fog alarm.....	S. Dines.....	Mar. 27, 1907..	7-0	00
Little Belledune.....	J. A. Roberty .....	Feb. 21, 1905..	380	00
Long Eddy point, fog alarm .....	G. T. Tatton.....	Oct. 16, 1886..	980	00
Long point .....	R. Bates .....	Aug. 19, 1912..	125	00
Machias Seal island, light and fog alarm.....	W. L. Harvey.....	July 8, 1904..	1,440	00
McColgan point.....	S. McColgan.....	Dec. 30, 1913..	120	00

\* \$25 for operating foghorn or bell.



STATEMENT of lightstations and names of lightkeepers, etc.—Continued.

NEW BRUNSWICK AGENCY—Continued.

Name of Station.	Name of lightkeeper.	Appointed.	Salary.
			\$ cts.
McFarlane point.....	A. McFarlane.....	Dec. 3, 1909..	120 00
McMann point.....	H. R. McMann.....	Nov. 2, 1901..	140 00
Marks point.....	W. Maloney.....	Nov. 7, 1903..	220 00
Middle island.....	M. Murray.....	April 10, 1902..	320 00
Midjik bluff.....	A. Henderson.....	Oct. 4, 1894..	200 00
Miramichi lightship.....	R. McLean.....	April 12, 1902..	980 00
Miscou gully.....	R. McConnell, Jr.....	Sept. 9, 1897..	180 00
Miscou island, light and fog alarm.....	J. A. Ward.....	Sept. 28, 1912..	905 00
Moncton, Fort.....	G. W. Sillicker.....	May 27, 1912..	125 00
Mulholland point.....	A. Parker.....	June 13, 1901..	260 00
Musquash island.....	E. M. Akerley.....	March 4, 1912..	150 00
*Musquash.....	J. S. Galbraith.....	Jan. 28, 1914..	600 00
*Navy Bar.....	J. Kilpatrick.....	Dec. 26, 1906..	600 00
Negro point.....	E. Ross.....	March 5, 1878..	600 00
Neguac range.....	J. Robinson.....	June 15, 1912..	275 00
Neguac, lower range.....	C. McIntosh.....	Dec. 9, 1892..	180 00
Newcastle.....	R. B. Matheson.....	April 18, 1898..	140 0
Oak point, Miramichi, range.....	J. Bowie, Jr.....	June 2, 1906..	180 0
Oak point, St. John.....	Mrs. B. M. Francombe.....	Dec. 20, 1907..	140 0
Oromocto.....	Miss S. J. Brennan.....	Jan. 12, 1910..	180 00
Outhouse point.....	S. Edgett.....	June 14, 1910..	140 00
Palmer landing.....	B. R. Palmer.....	Dec. 22, 1911..	125 00
Partridge island, light and fog alarm.....	J. B. Dey.....	March 3, 1913..	1,200 00
*Pea point.....	G. D. Eldridge.....	Jan. 7, 1913..	335 00
Peck point, light and fog alarm.....	E. Lockhart.....	Aug. 31, 1908..	680 00
Perry point.....	S. T. Lamb.....	Nov. 4, 1911..	130 00
Petit Rocher.....	J. D. Laplante.....	May 16, 1911..	160 00
*Pokemouche.....	M. Hayden.....	Oct. 17, 1888..	380 00
*Pokesudie.....	W. M. Cormier.....	May 24, 1912..	275 00
*Portage island range.....	P. Morrison, Jr.....	May 17, 1892..	380 00
Preston beach range.....	S. Preston.....	July 11, 1889..	220 00
Quaco, light and fog alarm.....	{ C. Brown (lightkeeper).....	Nov. 25, 1884..	490 00
	{ L. B. Bradshaw (engineer).....	Aug. 2, 1887..	490 00
Reid point.....	W. Lamb.....	Feb. 25, 1909..	140 00
Richibucto bar range.....	C. P. Richard.....	May 24, 1912..	230 00
Richibucto channel range.....	J. Robichaud.....	June 16, 1902..	260 00
Richibucto north beach range.....	F. McNeill.....	May 3, 1909..	260 00
Richibucto head.....	P. F. Richard.....	May 30, 1895..	320 00
Robertson point.....	C. Dean.....	Mar. 20, 1912..	125 00
*St. Andrews.....	W. J. Pendleberry.....	April 10, 1889..	380 00
St. Louis gully range.....	D. L. Maillet.....	May 13, 1912..	150 00
St. Martins.....	W. Calhoun.....	Nov. 13, 1911..	160 00
Sand point.....	J. F. McCloskey.....	May 2, 1913..	120 00
Sapin point.....	D. L. Daigle.....	Aug. 9, 1912..	85 00
Shampier wharf.....	B. Hazen.....	Aug. 25, 1913..	120 00
Shediac harbour range.....	T. Harts.....	Feb. 17, 1905..	140 00
Shediac island range.....	M. Robinson.....	Dec. 29, 1873..	380 00
Shediac north channel range.....	F. Gould.....	Jan. 13, 1899..	140 00
Sheldrake island range.....	J. A. Morrison.....	Jan. 31, 1910..	380 00
Shippigan gully range.....	J. DeGrace.....	June 4, 1899..	260 00
*Southwest head, Grand Manan.....	T. P. Foster.....	Sept. 26, 1910..	660 00
*Southwest Wolf.....	E. Wright.....	Mar. 6, 1906..	680 00
Spencer, Cape, light and fog alarm.....	{ J. E. Collins (engineer).....	June 23, 1908..	864 00
	{ C. McKee (lightkeeper).....	May 24, 1912..	504 00
Spruce point.....	Mrs. G. B. Hannah.....	Sept. 15, 1892..	220 00
Stonehaven.....	W. Daley.....	July 30, 1913..	140 00
*Swallowtail.....	G. A. Lahey.....	Oct. 29, 1912..	540 00
Swashway range.....	S. Williston.....	June 4, 1902..	380 00
Tiner point, fog alarm.....	A. Splane.....	Oct. 26, 1905..	980 00
*Tongue shoal.....	T. Rooney.....	Dec. 26, 1906..	520 00
Tormentine range, Cape.....	J. Wall.....	June 5, 1912..	190 00
Tracadie North, range.....	F. D. Basque.....	Nov. 22, 1909..	380 00
Tracadie South.....	W. Godin.....	July 14, 1913..	220 00
Vin, baie du, range.....	J. McLeod.....	Oct. 13, 1909..	320 00
Wilnot bluff.....	J. H. True.....	Sept. 12, 1899..	140 00

\* 25 for operating foghorn or bell.



## SESSIONAL PAPER No. 21

STATEMENT of lightstations and names of lightkeepers, etc.—*Continued.*

## NOVA SCOTIA AGENCY.

Name of Station.	Name of Lightkeeper.	Appointed.	Salary.	
			\$	cts.
Abbot harbour .....	W. H. B'Entremont .....	May 22, 1888..	140	00
Aconi point .....	J. C. Bonner .....	Nov. 6, 1903..	320	00
Advocate harbour .....	R. M. Morris .....	Sept. 12, 1912..	335	00
Amet island .....	W. Duncan .....	July 27, 1912..	540	00
Amherst basin range .....	W. S. Tait .....	Jan. 7, 1913..	230	00
Amherst point wharf .....	W. A. Downey .....	May 3, 1909..	120	00
Annapolis .....	T. M. Gavaza .....	July 14, 1913..	120	00
Apple river, light and fog alarm .....	H. E. Elderkin .....	Mar. 31, 1905..	980	00
Argyle .....	C. A. Amiro .....	Nov. 9, 1897..	600	00
*Arichat .....	W. Lavashe .....	Oct. 17, 1898..	380	00
Arichat, West (front) .....	M. Gerrior .....	Feb. 20, 1906..	140	00
Arichat, West (back) .....	E. Delory .....	Feb. 20, 1906..	140	00
Arichat, West wharf .....	C. Forrest .....	Nov. 8, 1911..	90	00
Arisaig .....	H. R. McAdam .....	Nov. 14, 1895..	180	00
Avon river bridges .....	Windsor Electric Co .....	June 12, 1906..	200	00
*Baccaro .....	H. Ross .....	Feb. 1, 1913..	520	00
Barrington lightship .....	A. N. Crowell .....	Jan. 7, 1913..	880	00
*Battery point .....	I. B. Heckman .....	Oct. 29, 1912..	395	00
Bass river .....	D. Vance .....	Oct. 24, 1907..	140	00
*Bear island .....	W. J. Malcolm .....	May 8, 1913..	320	00
Bear river .....	H. Warren .....	Jan. 7, 1913..	230	00
Beaver harbour .....	L. G. Cameron .....	Feb. 15, 1902..	220	00
Beaver island .....	T. Sampson .....	Oct. 13, 1892..	140	00
Beaver island, S.E. coast, light and fog alarm .....	W. E. O'Leary .....	Feb. 22, 1900..	1,180	00
Belliveau .....	J. H. Belliveau .....	Feb. 16, 1889..	140	00
*Betty island .....	P. Christian .....	June 29, 1901..	680	00
*Bickerton Port .....	T. O'Hara .....	Jan. 26, 1901..	260	00
Biglow point range .....	J. L. Peers .....	Oct. 7, 1912..	150	00
Blackrock .....	C. Robinson .....	Mar. 16, 1885..	440	00
Blackrock point .....	M. D. Morrison .....	June 8, 1892..	380	00
*Boars head .....	F. Ruggles .....	May 24, 1901..	520	00
*Bon portage island .....	M. M. Nickerson .....	June 28, 1913..	440	00
Borden wharf .....	F. R. Clark .....	April 29, 1904..	180	00
Bourgeois inlet .....	D. Sampson .....	April 12, 1912..	105	00
Bras d'Or (front) .....	R. McLennan .....	Dec. 11, 1912..	125	00
Bras d'Or (back) .....	A. Fraser .....	Jan. 13, 1903..	180	00
Brier island, light and fog alarm .....	J. N. Peters (lightkeeper) .....	June 6, 1901..	565	42
Brooklyn pier .....	B. H. Morrell (engineer) .....	June 6, 1901..	614	58
Budget .....	H. Godfrey .....	Mar. 25, 1909..	140	00
*Bunker island .....	S. E. Burns .....	Oct. 24, 1912..	275	00
*Bunker island, N.E. .....	F. H. Doane .....	July 27, 1904..	520	00
Burntcoat .....	J. H. Scoville .....	Jan. 9, 1907..	320	00
Campbell island .....	W. Y. Faulkner .....	June 22, 1898..	380	00
*Candlebox island .....	D. A. McDonald .....	July 23, 1911..	200	00
*Canso harbour .....	B. Le Blanc .....	Nov. 1, 1892..	440	00
Canso range .....	J. Long .....	Dec. 31, 1896..	440	00
Canso, North .....	W. J. Matthews .....	Dec. 17, 1904..	320	00
Caribou .....	R. McKay .....	Feb. 4, 1882..	440	00
*Carter island .....	J. A. McFarlane .....	May 24, 1912..	460	00
Caveau point range .....	R. McDonald .....	Sept. 28, 1896..	380	00
Charlo harbour range .....	N. D. Desveaux .....	April 27, 1912..	230	00
Chebucto head, light and fog alarm .....	A. Richard .....	Dec. 8, 1911..	240	00
*Chester .....	R. Holland .....	Aug. 31, 1906..	1,180	00
Cheticamp .....	U. Young .....	Feb. 15, 1884..	600	00
Cheticamp harbour range .....	D. Desveaux .....	July 19, 1912..	395	00
Cheverie .....	M. Roach .....	Aug. 5, 1912..	230	00
Church point .....	H. Macumber .....	May 27, 1912..	85	00
Ciboux Island .....	J. H. Saulnier .....	Aug. 8, 1878..	260	00
Clarke cove range .....	D. Campbell .....	Oct. 29, 1912..	540	00
Coffin island .....	A. Campbell .....	Sept. 15, 1910..	170	00
Cold Spring head .....	J. E. Wentzell .....	June 2, 1909..	600	00
Cole harbour range .....	W. Van Amburg .....	Oct. 6, 1909..	220	00
	G. C. Jamieson .....	Oct. 21, 1898..	260	00

\* \$25 for operating fog horn or bell.



STATEMENT of lightstations and names of lightkeepers, etc.—Continued.

NOVA SCOTIA AGENCY—Continued.

Name of Station.	Name of Lightkeeper.	Appointed.	Salary.	
			\$	cts.
Cole harbour.....	W. M. Munroe.....	April 23, 1907..	120	00
Country harbour.....	H. Burke.....	June 11, 1902..	600	00
Cranberry island, light and fog alarm.....	J. P. Hanlon.....	Aug. 25, 1905..	1,180	00
Crichton head.....	H. H. Crichton.....	May 6, 1874..	320	00
Cross island, light and fog alarm.....	C. Whynacht.....	June 20, 1910..	1,130	00
Croucher island.....	G. Croucher.....	Jan. 31, 1883..	440	00
Dartmouth.....	W. Patterson.....	June 3, 1903..	180	00
Derby point.....	D. C. McLean.....	July 19, 1912..	190	00
Devil islands lights.....	W. C. Fulker.....	May 3, 1886..	680	00
Digby pier.....	E. Beamen.....	May 29, 1897..	140	00
Dimock point, lights.....	Windsor Electric Co.....	June 12, 1906..	130	00
Dog island.....	S. Joyce.....	July 4, 1884..	260	00
Dover.....	E. Moreash.....	Sept. 24, 1906..	320	00
Eastern Points harbour.....	C. E. Mason.....	May 23, 1911..	110	00
Eatonville.....	R. Kirkpatrick.....	June 27, 1913..	80	00
Economy.....	E. McLellan.....	Mar. 8, 1912..	85	00
*Eddy point.....	E. Mundell.....	July 28, 1903..	600	00
*Egg island.....	H. M. Stoddard.....	Mar. 22, 1909..	680	00
Felix, Port.....	W. H. David.....	May 8, 1913..	320	00
Fisherman harbour.....	T. Beiswanger.....	Jan. 19, 1906..	260	00
Flat point, light and fog alarm.....	C. M. Peters (lightkeeper).....	April 13, 1910..	565	42
	D. Campbell (engineer).....	Aug. 12, 1912..	614	58
Flint island, light and fog alarm.....	A. Covey.....	July 4, 1913..	1,260	00
*Fort point.....	J. Misener.....	May 16, 1896..	260	00
Fourchu cape, light and fog alarm.....	T. S. Doane.....	Dec. 31, 1904..	1,180	00
Fourchu head.....	G. Hardy.....	June 16, 1909..	220	00
Freels cape, fog alarm.....	M. Myrick.....	Sept. 26, 1910..	1,130	00
Friar head.....	M. Doucette.....	Nov. 18, 1911..	85	00
Gabarus.....	J. McDonald.....	Dec. 10, 1908..	320	00
George, cape.....	A. L. McEachern.....	Sept. 16, 1898..	680	00
*George island.....	R. Ross.....	Jan. 17, 1885..	380	00
George, port.....	J. C. Anderson.....	Mar. 27, 1912..	150	00
Gilbert point.....	J. W. Melanson.....	Aug. 18, 1904..	300	00
Gillis point.....	H. McLean.....	Dec. 18, 1897..	260	00
Glace bay (front).....	M. McNeill.....	Nov. 19, 1907..	140	00
Glace bay (back).....	A. McFarlane.....	Nov. 19, 1907..	140	00
Glasgow point.....	A. Clory.....	July 25, 1894..	260	00
Grande digue.....	C. A. Kaulback.....	Feb. 12, 1909..	120	00
Grand étang.....	S. LeBlanc.....	Mar. 25, 1905..	120	00
*Grand passage.....	C. Buckman.....	Jan. 7, 1901..	380	00
Granville centre.....	H. Roney.....	Feb. 24, 1904..	140	00
Green island.....	E. F. Boudrot.....	Dec. 3, 1912..	620	00
Green island, Lunenburg.....	M. B. Pearl.....	Aug. 11, 1908..	680	00
Gregory island.....	M. Sampson.....	May 11, 1907..	260	00
Greville, Port, range.....	E. A. Hatfield.....	June 29, 1908..	320	00
Guion island.....	E. Bagnall.....	Dec. 10, 1912..	620	00
*Guysborough harbour.....	G. E. Scott.....	Jan. 12, 1914..	260	00
Hall harbour.....	E. McDonald.....	Aug. 10, 1911..	200	00
Hampton.....	H. Foster.....	Dec. 2, 1911..	200	00
Harbour island.....	A. I. Luddington.....	Feb. 3, 1912..	395	00
Havre bouché, range.....	P. Webb.....	Feb. 18, 1896..	380	00
Haute, Isle.....	P. E. Morris.....	Aug. 2, 1904..	680	00
Hebert, Port.....	W. Burgess.....	July 20, 1892..	260	00
Henry island.....	D. A. McLennan.....	Aug. 3, 1907..	600	00
Herring cove.....	P. V. Hayes.....	April 29, 1912..	150	00
Highland village.....	Noble Chisholm.....	Feb. 23, 1912..	85	00
Hobson island.....	N. Mosher.....	Oct. 19, 1912..	395	00
Hood, Port.....	R. D. McDonald.....	Feb. 17, 1913..	320	00
Horton.....	Mrs. S. M. Rathburn.....	Sept. 3, 1879..	380	00
Hubbard cove.....	O. Shatford.....	July 19, 1912..	335	00
Indian harbour.....	H. Boutlier.....	June 6, 1901..	260	00
Ingonish harbour.....	S. Hawley.....	Aug. 19, 1912..	230	00
Ingonish island.....	R. F. Warren.....	Sept. 17, 1903..	520	00
Ingonish, south harbour.....	J. Young.....	July 24, 1912..	85	00

\*\$25 for operating fog horn or bell.



## SESSIONAL PAPER No. 21

STATEMENT of lightstations and names of lightkeepers, etc.—*Continued.*NOVA SCOTIA AGENCY—*Continued.*

Name of Station.	Name of Lightkeeper.	Appointed.	Salary.
			\$ cts.
Iona.....	M. D. McNeil.....	Aug. 15, 1913..	140 00
*Isaac harbour.....	I. L. Giffin .....	April 28, 1894..	380 00
Jeddore harbour range.....	J. Faulkner.....	Aug. 2, 1913..	260 00
*Jeddore rock .....	J. W. Mitchell.....	Sept. 29, 1882..	600 00
*Jerome point.....	J. H. Barron.....	April 4, 1913..	320 00
*Jerseyman island.....	A. Theriault.....	May 31, 1905..	440 00
Joggins.....	F. Williams.....	May 13, 1912..	190 00
Jordan .....	D. Wolfe.....	Nov. 4, 1912..	150 00
Ketch harbour.....	C. Martin.....	May 19, 1905..	140 00
Kidston island.....	D. McRae.....	May 17, 1892..	320 00
*Kingsport.....	J. P. Corkum.....	Feb. 19, 1912..	150 00
*Lahave.....	W. H. Palmer.....	May 22, 1878..	320 00
L'Ardoise, Lower, (front).....	E. Burke .....	Mar. 27, 1912..	85 00
L'Ardoise, Lower, (back).....	A. Birrett.....	Mar. 27, 1912..	85 00
Lingan head.....	J. Kelly.....	Dec. 2, 1911..	290 00
*Liscomb.....	W. Redmond.....	Oct. 29, 1912..	460 00
Little Dyke.....	J. B. Urquhart.....	April 18, 1912..	85 00
*Little Hope.....	Reuben J. Colp.....	Oct. 30, 1913..	880 00
Little Lorembec .....	P. Gallant.....	Jan. 19, 1900..	180 00
Little Narrows.....	M. Matheson.....	Oct. 19, 1912..	190 00
*Lockeport.....	B. Decker.....	Nov. 27, 1913..	520 00
Lorne, Port .....	C. B. Beardsley.....	Dec. 3, 1912..	335 00
Louisburg, light and fog alarm. ....	W. Cameron (lightkeeper)...	Jan. 15, 1913..	396 95
	D. A. Campbell (engineer)...	May 20, 1902..	1,043 15
Louisburg range .....	T. Connigton.....	Oct. 26, 1907..	320 00
Mabou (front).....	J. B. McDonald.....	Sept. 20, 1912..	105 00
Mabou (back) .....	R. McLean.....	Dec. 7, 1906..	120 00
McKenzie point.....	H. McRae.....	July 27, 1912..	230 00
*McMillan point.....	A. McMaster.....	May 24, 1912..	230 00
McNab island.....	M. Lynch .....	June 23, 1905..	440 00
McNeill beach.....	L. McNeil.....	Aug. 6, 1884..	135 00
*Main-a-dieu.....	T. Campbell.....	Aug. 5, 1912..	395 00
*Maitland, Port.....	A. J. Sallows.....	Dec. 28, 1900..	260 00
Maitland wharf.....	L. Lawrence.....	Feb. 28, 1911..	90 00
Man-o'-War point .....	M. N. McLeod.....	Jan. 5, 1912..	125 00
Margaree .....	A. Y. McLellan.....	Sept. 12, 1912..	540 00
Margaree harbour (front) .....	M. A. Dunn .....	May 12, 1903..	120 00
Margaree harbour (back).....	R. McLennan .....	June 8, 1901..	120 00
Margaretville.....	J. Cleveland .....	Jan. 15, 1912..	275 00
Marjorie island .....	M. McDonald.....	Sept. 22, 1909..	180 00
*Mary Joseph.....	C. Turner.....	Aug. 27, 1913..	320 00
Masstown.....	R. Dykeman.....	Feb. 24, 1913..	80 00
Mauger beach, light and fog alarm .....	W. Icton, Sr.....	July 8, 1903..	980 00
Medway.....	S. T. Foster.....	Mar. 20, 1900..	140 00
*Medway head.....	J. Wynacht .....	April 18, 1913..	320 00
Metaghan river .....	J. A. Melancon.....	Dec. 7, 1911..	160 00
Minudie.....	F. Vernon.....	May 3, 1909..	100 00
Mitchener point.....	J. Smith .....	Sept. 28, 1912..	230 00
*Moser island.....	S. Moser .....	Nov. 6, 1885..	440 00
*Mouton, Port.....	A. H. Cook.....	April 27, 1912..	395 00
Mullins point range .....	J. Mullins.....	June 8, 1892..	320 00
Munro point.....	F. D. McLeod .....	May 13, 1912..	190 00
Musquodoboit (front).....	J. Kent.....	April 20, 1904..	260 00
Musquodoboit (back).....	A. M. Kent .....	Nov. 20, 1908..	180 00
*Negro island.....	B. Nickerson.....	July 26, 1897..	520 00
*Neil harbour.....	G. Sweet.....	Aug. 11, 1911..	240 00
New harbour .....	S. Zinck.....	Mar. 5, 1913..	100 00
Noel .....	J. Conley.....	Nov. 19, 1913..	120 00
North, Cape, light and fog alarm .....	M. C. McPherson (l'gtkeeper)...	Feb. 6, 1913..	500 00
	J. G. McAskill (engineer)...	May 29, 1911..	770 00
North East harbour range .....	E. Hagar.....	Jan. 28, 1914..	260 00
Or, Cap d', fog alarm. ....	D. P. McAleese.....	Oct. 30, 1913..	880 00
*Ouetique island .....	F. A. Burke.....	Feb. 16, 1907..	520 00
*Owls head .....	S. W. Blaxland.....	Dec. 2, 1911..	410 00

\* \$25 for operating fog horn or bell.



STATEMENT of lightstations and names of lightkeepers, etc.—Continued.

NOVA SCOTIA AGENCY—Continued.

Name of Station.	Name of Lightkeeper.	Appointed.	Salary.
			\$ cts.
*Page island.....	A. M. Powell.....	Feb. 17, 1906..	320 00
Parker cove .....	C. Halliday.....	May 30, 1912..	150 00
*Parrsboro.....	W. J. Simpson.....	Oct. 27, 1911..	455 00
*Pease island.....	T. Baker.....	May 19, 1879..	520 00
Peggy point.....	S. H. Garrison.....	Dec. 22, 1902..	520 00
Pennant harbour.....	P. A. Gray.....	June 30, 1903..	180 00
*Petitdegrat .....	X. Marchand.....	Dec. 3, 1912..	275 00
Pictou bar .....	G. Carmichael.....	Nov. 12, 1910..	580 00
Pictou custom house.....	D. Munro.....	July 19, 1912..	125 00
Pictou harbour range .....	J. Dicks.....	July 19, 1912..	275 00
Pictou island, east end.....	A. McFarlane .....	June 8, 1892..	600 00
Pictou island, west end.....	C. D. Patterson.....	Mar. 29, 1905..	600 00
Pictou island wharf.....	J. McLean.....	Dec. 22, 1911..	125 00
Pomquet island .....	M. Murphy.....	Dec. 18, 1890..	520 00
Pope harbour .....	J. Abriel.....	Nov. 18, 1911..	410 00
Portapique .....	W. Chisholm .....	Feb. 26, 1914..	120 00
Porter point.....	Frederick W. Bishop.....	April 29, 1904..	180 00
*Poulamon .....	H. Young.....	Dec. 10, 1912..	275 00
Prim point, light and fog alarm.....	L. M. Ellis.....	Oct. 19, 1912..	1,030 00
*Pubnico harbour.....	G. D. Amiro.....	Feb. 6, 1893..	440 00
Pugwash .....	C. J. Chapman .....	June 15, 1912..	395 00
*Quaker island .....	E. Fader.....	Feb. 9, 1910..	425 00
*Queensport.....	T. O'Leary.....	April 12, 1913..	380 00
Race, Cape, light and fog alarm.....	J. Myrick.....	Nov. 1, 1897..	2,300 00
Red islands.....	J. P. Campbell .....	Nov. 30, 1901..	180 00
*Redman head.....	J. Croft.....	Sept. 10, 1909..	260 00
Rond, Cap. ....	J. J. Mauger.....	Nov. 16, 1898..	520 00
Roseway, Cape, light and fog alarm.....	J. L. McKenna.....	Mar. 31, 1899..	1,180 00
Sable, Cape, light and fog alarm.....	A. H. Cunningham.....	July 16, 1902..	1,180 00
Sable island, E.E.....	J. Gregoire.....		225 00
Sable island, W.E.....	J. Edwards.....		225 00
*Sable island, Cape, west head .....	W. B. Smith, Jr. ....	April 12, 1890..	320 00
St. Ann harbour.....	A. Nicholson .....	June 5, 1905..	260 00
St. Esprit island.....	A. Ferguson.....	Feb. 27, 1914..	600 00
*St. George, Cape.....	John Murray .....	Nov. 3, 1882..	320 00
St. Lawrence, Cape.....	C. Jamieson.....	Sept. 21, 1893..	600 00
St. Mary, Cape .....	B. H. Robicheau.....	July 5, 1886..	520 00
St. Paul island, N, light and fog alarm.....	J. McLeod.....	Nov. 1, 1912..	1,440 00
St. Paul island, S.....	A. G. McNeil.....	Sept. 5, 1913..	600 00
Salter head .....	C. Smith.....	June 21, 1888..	120 00
Sambro, light and explosive fog signal .....	A. Gilkie.....	Jan. 8, 1877..	980 00
Sambro harbour .....	J. H. Finlay.....	Dec. 7, 1899..	180 00
Sambro inner island.....	E. Smith.....	Jan. 3, 1908..	180 00
*Sand Spit.....	N. D. Butler.....	Feb. 6, 1913..	320 00
Scatari, light and fog alarm.....	J. Nearing.....	May 25, 1912..	1,440 00
Seal island, S.E. coast, light and fog alarm.....	J. Crowell.....	Oct. 14, 1896..	1,180 00
Shafner point.....	J. K. Healy.....	Dec. 17, 1912..	230 00
Sharp, Cape, light and fog alarm.....	J. E. George.....	April 12, 1913..	880 00
Sh-et Harbour passage.....	G. W. Wambolt (temp.)....	Dec. 25, 1911..	110 00
*Sheet rock .....	S. Kenny.....	June 2, 1909..	680 00
*Ship harbour.....	H. Parmer.....	Oct. 14, 1899..	380 00
Shulie.....	C. Patterson .....	Oct. 26, 1905..	260 00
Sissiboo.....	L. P. Amirault.....	April 10, 1912..	275 00
Spencer island.....	R. Spicer.....	Oct. 22, 1912..	150 00
Spencer point.....	R. A. Spencer .....	April 1, 1870..	180 00
Steven point range.....	D. Fullerton .....	Oct. 7, 1912..	150 00
*Stoddart island .....	E. Larkin.....	Mar. 18, 1896..	320 00
*Sydney bar.....	D. H. McNeil .....	Nov. 16, 1912..	395 00
Sydney, Battery point range.....	J. J. McDonald.....	June 30, 1913..	80 00
Sydney range (front).....	H. Lewis.....	May 8, 1913..	320 00
Sydney range (back) .....	A. J. Lewis.....	May 2, 1905..	260 00
Tanner island.....	R. G. Wight.....	Sept. 24, 1913..	180 00
Terence bay.....	S. P. Slaunwhite.....	Oct. 13, 1903..	180 00
Three Top island.....	H. S. Munroe.....	May 24, 1912..	395 00

\* \$25 for operating fog horn or bell.



## SESSIONAL PAPER No. 21

STATEMENT of lightstations and names of lightkeepers, etc.—*Continued.*NOVA SCOTIA AGENCY—*Continued.*

Name of Station.	Name of Lightkeeper.	Appointed.	Salary.
			\$ cts.
*Torbay . . . . .	G. A. Shrader . . . . .	May 13, 1912..	395 00
Troop point . . . . .	R. F. Schaffner . . . . .	Nov. 7, 1912..	150 00
Tupper, Point. . . . .	D. Gillis . . . . .	Feb. 6, 1906..	410 00
Tusket river . . . . .	S. LeBlanc . . . . .	Aug. 2, 1889..	380 00
Victoria beach . . . . .	S. Haynes . . . . .	April 13, 1912..	150 00
Wade, Port . . . . .	H. Burke . . . . .	" 15, 1912..	125 00
Wallace harbour range . . . . .	A. D. Lawson . . . . .	Jan. 7, 1913..	230 00
Walton harbour . . . . .	S. Brown . . . . .	Dec. 16, 1911..	230 00
*Wedge island . . . . .	W. R. Church . . . . .	Mar. 22, 1907..	680 00
Westhaver island . . . . .	A. Strum . . . . .	Sept. 8, 1888..	320 00
West Ironbound island . . . . .	F. N. Wolfe . . . . .	Dec. 19, 1916..	425 00
*Westport . . . . .	E. W. Suthern . . . . .	April 12, 1890..	520 00
*Whitehead island . . . . .	A. Munroe . . . . .	Jan. 15, 1912..	620 00
Whycocomagh . . . . .	M. Matheson . . . . .	Sept. 11, 1884..	120 00
Wolfville . . . . .	J. L. Franklyn . . . . .	April 4, 1902..	180 00
*Woods harbour . . . . .	J. Goodwin . . . . .	Aug. 27, 1900..	320 00
Yarmouth corner beacon . . . . .	C. J. O'Hanley . . . . .	Oct. 17, 1905..	260 00

## PRINCE EDWARD ISLAND AGENCY.

Alberton range . . . . .	J. Skerry . . . . .	June 12, 1913..	120 00
Annandale range . . . . .	J. Norton . . . . .	July 12, 1912..	150 00
Bear, Cape . . . . .	H. Hyde . . . . .	July 5, 1912..	460 00
Belle river . . . . .	M. J. Bell . . . . .	April 29, 1913..	80 00
Big Tignish range . . . . .	D. Handrahan . . . . .	Oct. 7, 1912..	190 00
*Blockhouse point . . . . .	N. W. Currie . . . . .	April 27, 1912..	460 00
Brighton beach range . . . . .	J. Purcell . . . . .	Dec. 16, 1911..	350 00
Brush wharf range . . . . .	F. F. Dreeland . . . . .	Mar. 30, 1912..	105 00
Cardigan river . . . . .	J. D. Morrison . . . . .	Aug. 15, 1901..	140 00
Cascumpeque . . . . .	W. Mallet . . . . .	Feb. 27, 1914..	380 00
Covehead range . . . . .	J. McCabe . . . . .	Dec. 20, 1911..	130 00
Darnley basin range . . . . .	C. Taylor . . . . .	June 14, 1897..	120 00
Darnley point range . . . . .	C. Morrison . . . . .	May 14, 1913..	220 00
Douse point range . . . . .	H. A. McDonald . . . . .	(Temporary) . . . . .	120 00
East point, light and fog alarm . . . . .	A. C. McIntyre . . . . .	April 10, 1912..	905 00
East Souris . . . . .	G. N. McDonald . . . . .	July 14, 1913..	440 00
Egmont, cape . . . . .	E. J. Arsenault . . . . .	Aug. 26, 1912..	335 00
Fish Island range . . . . .	P. Hickey . . . . .	May 22, 1913..	380 00
Georgetown (front) . . . . .	J. Vatcher . . . . .	Feb. 27, 1914..	180 00
Georgetown (back) . . . . .	R. Westaway . . . . .	July 19, 1912..	220 00
Georgetown wharf . . . . .	S. Hemphill . . . . .	Jan. 13, 1913..	140 00
Hazard point range . . . . .	E. Stewart . . . . .	June 11, 1910..	305 00
*Indian point . . . . .	F. W. Peters . . . . .	May 2, 1913..	440 00
Leards range (outer) . . . . .	A. J. Howatt . . . . .	July 22, 1893..	180 00
Leards range (inner) . . . . .	K. C. Holmes . . . . .	May 22, 1912..	150 00
Little Channel range . . . . .	W. Hardy . . . . .	July 26, 1875..	180 00
London, New range . . . . .	J. A. Pidgeon . . . . .	May 24, 1912..	190 00
Miminegash (front) . . . . .	P. O'Brien . . . . .	May 14, 1897..	120 00
Miminegash (back) . . . . .	J. Costain . . . . .	June 5, 1913..	100 00
Murray harbour (front) . . . . .	L. McNeill . . . . .	April 17, 1912..	105 00
Murry harbour (back) . . . . .	R. Penny . . . . .	Nov. 11, 1897..	120 00
North point . . . . .	D. P. McCarthy . . . . .	Aug. 5, 1912..	395 00
Northport range . . . . .	B. Mountain . . . . .	July 13, 1912..	150 00
Nor h Rustico ranges . . . . .	L. Blacquiére . . . . .	April 22, 1912..	190 00
Panmure head light and fog alarm . . . . .	W. A. McDonald . . . . .	Sept. 28, 1912..	452 50
	M. Condon, (Engineer) . . . . .	Aug. 10, 1908..	490 00
Prim point . . . . .	S. A. McLean . . . . .	July 27, 1912..	395 00
Savage harbour range . . . . .	J. A. McDonald . . . . .	" 11, 1889..	180 00
Sea Cow head . . . . .	M. P. O'Raneghan . . . . .	April 21, 1873..	440 00

\* \$25 for operating for horn or bell.



STATEMENT of lightstations and names of lightkeepers, etc.—Continued.  
PRINCE EDWARD ISLAND AGENCY—Continued.

Name of Station.	Name of Lightkeeper.	Appointed.	Salary.
			\$ cts.
Shipwreck point.....	F. McKinnon.....	Oct. 30, 1913....	380 00
Summerside (back)....	F. Muttart.....	May 3, 1912....	125 00
Summerside (front)....	J. Fraser.....	April 12, 1897....	180 00
St. Peters island.....	J. J. Taylor.....	June 15, 1912....	335 00
St. Peters range.....	J. McGrath.....	" 15, 1912....	190 00
Tracadie range.....	W. A. McDonald.....	Dec. 22, 1911....	160 00
Tryon, Cape.....	W. Bell.....	Mar. 17, 1905....	380 00
Warren farm range.....	C. E. H. Newson.....	May 11, 1912....	125 00
West point.....	W. McDonald.....	Aug. 22, 1876....	440 00
West point wharf.....	J. N. Ladner.....	Sept. 6, 1912....	125 00
Wood island.....	L. Morrow.....	Oct. 29, 1912....	335 00
Wood island harbour range.....	J. Young.....	Nov. 14, 1902....	140 00
Wrights range.....	C. I. Wright.....	June 14, 1894....	180 00

QUEBEC AGENCY.

Amherst island.....	C. Cormier.....	Mar. 21, 1911..	480 00
*Amherst wharf.....	P. J. Brophy.....	Nov. 15, 1910..	90 00
Amour point, light and fog alarm.....	T. Wyatt.....	Oct. 18, 1889..	1,440 00
Anguille, cape, light and fog alarm.....	A. Patry.....	Oct. 9, 1908..	1,440 00
Ange Gardien (back)....	P. Vézina.....	Mar. 14, 1912..	105 00
Ange Gardien, (front)....	F. Doyon.....	Apr. 12, 1912..	105 00
Anticosti, S. W. point.....	Z. Lemieux.....	July 25, 1900..	880 00
Anticosti, west point, light and explosive fog signal.....	L. Malouin.....	May 24, 1912..	905 00
Bagot bluff, light and fog alarm.....	E. Laprise.....	Apr. 18, 1903..	1,180 00
*Barachois de Malbaie.....	J. Girard.....	May 14, 1912..	105 00
Basile, Pointe à (front)....	E. Douville.....	Feb. 6, 1901..	220 00
Basile, Point à (back)....	G. Demers.....	Mar. 12, 1914..	180 00
*Basse, Point.....	A. Arseneau.....	May 17, 1911..	90 00
Bauld, Cape, light and fog alarm.....	E. Fontaine.....	July 15, 1905..	1,440 00
Beaufils, Anse à.....	P. J. Ferguson.....	May 21, 1912..	85 00
Bélier, Ile au.....	W. Gaudreault.....	Oct. 30, 1901..	200 00
Bellechasse.....	J. O. Bilodeau.....	June 15, 1903..	520 00
Belle isle, north end, light and fog alarm.....	W. G. Wyatt.....	Oct. 16, 1913..	1,440 00
Belle, isle, south end, light and fog alarm.....	J. Richards.....	Oct. 7, 1912..	1,675 00
Bersimis range.....	H. Grenier.....	Aug. 8, 1903..	180 00
Bicquette island, light and fog alarm.....	E. Heppel.....	Mar. 21, 1913..	980 00
Bird rocks, light and fog alarm.....	E. Bourque.....	Aug. 5, 1912..	1,475 00
Bleue, Pointe.....	A. Tessier.....	June 9, 1904..	100 00
Bonaventure, Little.....	B. Arsenault.....	July 26, 1913..	80 00
Bonaventure point.....	O. Bourdage.....	June 2, 1913..	260 00
Bonaventure river.....	F. Arsenault.....	April 26, 1913..	80 00
Brandy Pots.....	A. Richard.....	Oct. 7, 1878..	600 00
Brion island.....	P. Chevrier.....	June 23, 1905..	600 00
Brulé Cap, range.....	F. Fillion.....	Feb. 24, 1912..	540 00
Caribou river, (front).....	H. Savard.....	May 12, 1913..	105 00
Caribou river, (back).....	J. Savard.....	July 1, 1892..	120 00
*Carleton.....	L. Leblanc.....	April 12, 1913..	380 00
Carleton wharf.....	J. Cauchon.....	July 20, 1913..	80 00
Carlisle, new.....	J. Chisholm.....	Dec. 17, 1908..	100 00
Chat, Cap, light and explosive fog signal.....	L. Côté.....	Dec. 3, 1901..	880 00
Chat, River range.....	J. Chenard.....	Dec. 15, 1911..	130 00
Chicoutimi.....	A. Harvey.....	May 30, 1889..	100 00
Cloridorme range.....	J. Francoeur.....	Dec. 23, 1912..	140 00
Clarke city.....	F. W. Clarke.....	Feb. 10, 1913..	85 00
Corbeau, Cap au.....	P. Cimon.....	July 4, 1912..	105 00
Coudres, Isle aux.....	E. Pednault.....	April 15, 1912..	85 00
Crane island.....	D. Vézina.....	April 26, 1904..	440 00
*Daniel, Port.....	M. McInnis.....	Jan. 19, 1914..	100 00

\* \$25 for operating fog horn or bell.



## SESSIONAL PAPER No. 21

STATEMENT of lightstations and names of lightkeepers, etc.—*Continued.*QUEBEC AGENCY—*Continued.*

Name of Station.	Name of Lightkeeper.	Appointed.	Salary.	
			\$	cts.
*Daniel, Port west.....	I. McKenzie.....	Dec. 26, 1912..	140	00
D'Espoir, Cape.....	C. Bourget.....	Nov. 1, 1897..	600	00
Dogs, Cape, light and fog alarm.....	L. Bergeron.....	Sept. 11, 1909..	980	00
Domaine (front).....	N. Gagnon.....	April 23, 1912..	105	00
Domaine (back).....	X. Emond.....	July 13, 1908..	120	00
East cape.....	G. Sergerie.....	Nov. 3, 1910..	200	00
*Eboulements, Les.....	H. Tremblay.....	Mar. 7, 1914..	80	00
Egg island.....	E. Chouinard.....	May 24, 1911..	640	00
Eau, Anse à l'.....	A. Gingras.....	May 29, 1906..	100	00
*Entry island.....	G. F. Cullins.....	July 30, 1901..	380	00
Escoumains wharf.....	C. Boucher.....	Sept. 14, 1911..	90	00
Escoumains range.....	Saguenay Lumber Co..	Sept., 1906..	150	00
Eskimo point range.....	J. F. Boudreault.....	Oct. 3, 1907..	180	00
*Etang du Nord.....	N. Arseneau.....	May 16, 1911..	480	00
Fame point, light and fog alarm.....	H. L. Ascah.....	Feb. 1, 1913..	1,200	00
Father point light and fog alarm.....	J. Cahill.....	Mar. 16, 1912..	1,260	00
Ferolle point, fog alarm.....	D. Beaudoin.....	Oct. 19, 1912..	1,030	00
Flat island.....	A. McKenna (temporary).....	.....	680	00
Flower island, light and explosive fog signal.....	J. Lavallée.....	April 12, 1905..	780	00
Great Fox river, range.....	T. Dufresne.....	Dec. 1, 1911..	160	00
*Gascons, Anse aux.....	J. Ahier.....	Jan. 19, 1914..	80	00
Gaspé, Cape, light and explosive fog signal.....	J. Smith.....	Jan. 20, 1912..	805	00
Godbout range.....	N. A. Comeau.....	Mar. 31, 1910..	140	00
*Goose cape.....	C. Audet.....	Feb. 13, 1914..	320	00
Grand Entry harbour range.....	A. Turbide.....	April 25, 1907..	170	00
Grande ile, Kamouraska.....	J. Desjardins.....	Aug. 6, 1913..	600	00
Grande Vallée range.....	A. Fournier.....	Oct. 15, 1904..	180	00
Grand Pabos.....	W. McRea.....	June 4, 1912..	85	00
*Grand river.....	W. Bisson.....	Oct. 26, 1896..	220	00
*Grand river wharf.....	D. Boutin.....	April 22, 1912..	85	00
Green island, light and explosive fog signal.....	R. W. Lindsay.....	Sept. 25, 1888..	880	00
Greenly island, light and fog alarm.....	N. Côté.....	Aug. 11, 1908..	1,440	00
Griffin cove range.....	H. Boulet.....	July 4, 1908..	180	00
Grosse Roche.....	X. Maltais.....	Mar. 28, 1913..	320	00
Heath point, light and explosive fog signal.....	C. Hubert.....	July 27, 1907..	980	00
Hospital rock range.....	V. Lavoie.....	Mar. 22, 1909..	380	00
Janvrin and Paddy shoals.....	K. J. Carter.....	April 6, 1911..	200	00
Loup, Rivière du.....	E. Madore.....	March 4, 1913..	100	00
Magdalen cape, light and fog alarm.....	F. J. Sasseville.....	June 9, 1886..	980	00
Magpie bay range.....	A. Dupuis.....	Oct. 22, 1907..	180	00
Mai, Iles de.....	A. Lebel.....	" 30, 1913..	180	00
*Maquereau, point.....	A. Bertrand.....	Dec. 21, 1877..	440	00
Martre, Rivière à la, light and fog alarm.....	J. L'italien.....	Mar. 5, 1912..	1,030	00
Matane.....	J. Banville.....	Feb. 1, 1897..	520	00
Metis, Little.....	E. Caron.....	May 29, 1906..	600	00
Mistook range.....	J. Fleury.....	Feb. 14, 1912..	150	00
Moisie ranges.....	A. St. Louis.....	June 14, 1909..	170	00
Mont Louis range.....	J. Lemieux.....	Jan. 3, 1912..	150	00
Monts, Pointe des, light and explosive fog signal.....	V. Faffard.....	July 10, 1889..	880	00
Moulin, Rivière du (back).....	G. Laberge.....	Aug. 13, 1913..	100	00
Moulin, Rivière du (front).....	G. Tremblay.....	Sept. 9, 1889..	120	00
Natashkwan, Little.....	D. Landry.....	May 13, 1910..	305	00
Natashkwan point.....	W. Landry.....	July 14, 1913..	220	00
*Newport point.....	A. David.....	Jan. 20, 1912..	190	00
New Richmond wharf.....	W. Campbell.....	Feb. 14, 1910..	95	00
*Noire, Pointe range.....	J. E. Boulianne.....	Jan. 18, 1904..	320	00
Norman, Cape, light and fog alarm.....	A. W. Campbell.....	July 28, 1911..	1,080	00
Oak point range.....	T. Harper.....	July 24, 1909..	180	00
Orignaux, Pointe aux.....	C. Levesque.....	Dec. 8, 1913..	380	00
*Paspebiac.....	J. Loisel.....	Aug. 27, 1894..	260	00
*Percé.....	F. Bourget.....	Mar. 18, 1893..	260	00
Percé wharf.....	P. Levesque.....	May 6, 1912..	85	00
Peribonka, inner and outer ranges.....	E. Gaudreault.....	June 15, 1912..	230	00

\* \$25 for operating fog horn or bell.



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STATEMENT of lightstations and names of lightkeepers, etc.—*Continued.*QUEBEC AGENCY—*Continued.*

Name of Station.	Name of Lightkeeper.	Appointed.	Salary.	
			\$	cts.
Peribonka, middle range.....	F. C. Frasse.....	May 29, 1912..	125	00
Perroquet island.....	H. Vigneau.....	" 8, 1912..	620	00
* Peter Point.....	W. A. St. Croix.....	Feb. 13, 1914..	520	00
Pilgrim, Long.....	H. Morin.....	April 29, 1898..	600	00
Pipe, Rivière à la.....	A. Morin.....	Oct. 3, 1901..	140	00
Portneuf.....	E. Tremblay.....	May 16, 1903..	520	00
Portneuf range.....	P. Poitras.....	Oct. 24, 1906..	180	00
Quebec harbour range.....	Quebec Harbour Comm'srs.....	.....	60	00
Ray, Cape, light and fog alarm.....	E. H. Rennie.....	Oct. 19, 1884..	1,440	00
Red islet.....	P. T. Fraser.....	April 12, 1890..	780	00
Rich point.....	N. Breton.....	May 16, 1896..	680	00
*Rimouski wharf.....	U. Lavoie.....	Oct. 24, 1906..	100	00
Roberval range.....	Roberval Electric Co.....	June 21, 1898..	100	00
Rosier, Cape, light and fog alarm.....	E. Costin.....	Nov. 4, 1890..	1,180	00
St. Adelaide de Pabos.....	S. Duguay.....	May 14, 1912..	85	00
St. Alphonse.....	P. Tremblay.....	June 19, 1895..	100	00
Ste. Anne de Beaupré (back).....	G. Paré.....	June 28, 1912..	105	00
Ste. Anne de Beaupré (front).....	J. DeBlois.....	July 4, 1912..	105	00
Ste. Anne des Monts range.....	F. Henley.....	Dec. 22, 1911..	160	00
Ste. Anne des Monts wharf.....	D. Dugas.....	Oct. 31, 1912..	85	00
St. Antoine (front).....	L. Fréchette.....	Aug. 11, 1908..	140	00
St. Antoine (back).....	G. Demers.....	Dec. 7, 1911..	160	00
St. Charles de Caplan wharf.....	U. Dion.....	May 20, 1911..	90	00
Ste. Croix.....	W. A. Thurber.....	June 28, 1907..	260	00
Ste. Croix (front).....	T. Croteau.....	Mar. 28, 1901..	120	00
Ste. Croix (back).....	Mrs. D. Racette.....	Dec. —, 1890..	120	00
Ste. Famille (back).....	A. Paquet.....	May 17, 1908..	120	00
Ste. Famille (front).....	A. Poulin.....	April 26, 1898..	140	00
Ste. Félicité fog alarm.....	A. Otis.....	Feb. 1, 1913..	680	00
St. François (front).....	F. X. Lamelin.....	April 11, 1912..	125	00
St. François (back).....	A. Emond.....	July 12, 1913..	120	00
St. François wharf.....	O. Emond.....	Nov. 2, 1912..	85	00
*St. Godfroy wharf.....	J. Joseph.....	May 14, 1912..	85	00
St. Jean.....	A. Laverdière.....	April 10, 1912..	335	00
St. Jean, Anse.....	F. Lavoie.....	Mar. 13, 1889..	100	00
St. Laurent.....	T. Coulombe.....	Dec. 23, 1911..	335	00
St. Mary island.....	J. Galibois.....	Temporary.....	600	00
St. Martin, Poste (front).....	J. Duperré.....	Feb. 14, 1914..	100	00
St. Martin, Poste (back).....	A. Tremblay.....	Feb. 4, 1913..	105	00
St. Omer wharf.....	H. Godbout.....	Feb. 24, 1913..	80	00
Ste. Pétronille.....	N. Ferland.....	Sept. 3, 1901..	320	00
St. Pierre (front).....	A. Asselin.....	Mar. 19, 1912..	105	00
St. Pierre (back).....	J. Roberge.....	May 13, 1908..	120	00
*St. Siméon wharf.....	E. Tremblay.....	Aug. 13, 1912..	85	00
St. Thomas de Montmagny range.....	E. Nicol.....	April 7, 1910..	135	00
Salmon, Cape, light and fog alarm.....	L. Bouchard.....	May 16, 1896..	980	00
*Sandy Beach point.....	J. N. Ascah.....	Dec. 2, 1911..	560	00
Seven islands, light and fog alarm.....	H. Demeules.....	July 13, 1909..	1,180	00
Seven islands wharf.....	C. Cormier.....	Nov. 18, 1913..	80	00
Simard (back).....	T. Simard.....	May 13, 1913..	100	00
Simard (front).....	H. Simard.....	May 13, 1913..	120	00
Stone Pillar and Algernon rock.....	E. Francœur.....	Feb. 15, 1912..	805	00
Trembles, Pointe aux.....	L. Gauvin.....	Sept. 20, 1913..	80	00
Trois Pistoles wharf.....	D. D'Amours.....	Dec. 21, 1911..	130	00
*Upper Traverse.....	A. Fournier.....	April 14, 1906..	980	00
Valin, River (back).....	G. Lavoie.....	June 7, 1909..	90	00
Valin, River (front).....	M. Lavoie.....	June 7, 1909..	90	00
Verte, Ile, range.....	J. Charron.....	Mar. 1, 1912..	125	00

\* \$25 for operating fog horn or bell.



## SESSIONAL PAPER No. 21

STATEMENT of lightstations and names of lightkeepers, etc.—*Continued.*

## MONTREAL AGENCY.

Name of Station.	Name of Lightkeeper.	Appointed.	Salary.	
			\$.	cts.
Aigle, Ile à l' (front) . . . . .	C. Lussier . . . . .	April 16, 1912..	150	00
Aigle, Ile à l' (back) . . . . .	O. Beauchemin . . . . .	April 17, 1912..	150	00
Anglais, Pointe aux . . . . .	A. Labrosse . . . . .	July 19, 1912..	275	00
Argenteuil bay range . . . . .	J. Giroux . . . . .	Aug. 6, 1912..	125	00
Ash and Bloody islands . . . . .	G. L. Robinson . . . . .	Nov. 25, 1912..	320	00
Bague, Ile à la . . . . .	E. Thouin . . . . .	May 3, 1912..	230	00
Barques, Ile des . . . . .	J. Lavallée . . . . .	April 30, 1913..	320	00
Barre à Boulard (front) . . . . .	N. Daigle . . . . .	May 28, 1904..	320	60
Barre à Boulard (back) . . . . .	O. Lemay . . . . .	Aug. 9, 1912..	125	00
Batiscan (back) . . . . .	P. St. Arnault . . . . .	June 20, 1912..	125	00
Batiscan (front) . . . . .	B. Duval . . . . .	July 27, 1912..	190	00
Batture St. Antoine traverse range . . . . .	A. Colette . . . . .	Nov. 23, 1910..	110	00
Beauharnois range . . . . .	J. Julien . . . . .	Jan. 20, 1912..	275	00
Becancour (front) . . . . .	O. Gingras . . . . .	Mar. 15, 1906..	260	00
Becancour (back) . . . . .	A. Tourigny . . . . .	Mar. 15, 1906..	180	00
Becquets, St. Pierre les . . . . .	J. Mailly . . . . .	July 3, 1913..	100	00
Bellerive Park range . . . . .	C. Roy . . . . .	Jan. 12, 1905..	260	00
Bellevue, Ste. Anne de . . . . .	E. Filon . . . . .	June 18, 1913..	180	00
Belœil bridge . . . . .	H. Auclair . . . . .	Aug. 20, 1913..	80	00
Black point . . . . .	J. H. Peters . . . . .	June 1, 1891..	100	00
Blondeau, Chute à, range . . . . .	L. Kerr . . . . .	July 27, 1912..	230	00
Bouchard, Ile (front) . . . . .	Y. Laporte . . . . .	April 21, 1902..	220	00
Bouchard, Ile (back) . . . . .	A. Chicoine, jr. . . . .	June 16, 1903..	180	00
Boucherville range . . . . .	H. Carrière . . . . .	Aug. 26, 1903..	140	00
Cadieus, Pointe à . . . . .	S. Poirier . . . . .	May 4, 1904..	260	00
Cardinal traverse range . . . . .	P. Morin . . . . .	Nov. 22, 1910..	110	00
Caron point . . . . .	C. Proulx . . . . .	May 15, 1912..	105	00
Chambly basin range . . . . .	J. de Senneville . . . . .	June 24, 1907..	220	00
Chambly canton range . . . . .	J. Savage . . . . .	July 10, 1907..	220	00
Champlain (front) . . . . .	Mrs. A. Chartier . . . . .	July 3, 1912..	125	00
Champlain (back) . . . . .	C. Marchand . . . . .	June 21, 1912..	150	00
Champlain, upper (front) . . . . .	J. Vézina . . . . .	June 21, 1912..	125	00
Champlain, upper (back) . . . . .	O. Lapointe . . . . .	April 10, 1913..	140	00
Charles, Cape (front) . . . . .	A. Boisvert . . . . .	July 23, 1901..	140	00
Charles, Cape (back) . . . . .	A. Baron . . . . .	June 26, 1901..	140	00
Chene, Pointe au . . . . .	H. Lavoie . . . . .	May 17, 1913..	140	00
Church point traverse St. Antoine (front) . . . . .	F. Chagnon . . . . .	Nov. 8, 1913..	50	00
Church point traverse St. Antoine (back) . . . . .	P. Chagnon . . . . .	Nov. 8, 1913..	50	00
Citrouille, Pointe . . . . .	L. L'Heureux . . . . .	Mar. 3, 1913..	260	00
Contrecoeur course (front) . . . . .	J. Arpin . . . . .	April 22, 1904..	140	00
Contrecoeur course (back) . . . . .	O. Gobeille . . . . .	April 22, 1912..	150	00
Contrecoeur Verchères (front) . . . . .	J. B. Gervais . . . . .	May 13, 1912..	190	00
Contrecoeur Verchères (back) . . . . .	J. Dupuy . . . . .	Nov. 1, 1912..	190	00
Contrecoeur traverse (front) . . . . .	P. Piché . . . . .	April 22, 1912..	150	00
Contrecoeur traverse (back) . . . . .	A. Lacroix . . . . .	July 26, 1904..	180	00
Deslauriers, Ile (front) . . . . .	J. B. Lozeau . . . . .	May 3, 1912..	190	00
Deslauriers, Ile (back) . . . . .	A. Desmarais . . . . .	April 23, 1912..	105	00
Dorval and pointe Claire . . . . .	B. Gloude . . . . .	Sept. 7, 1872..	400	00
Gallia bay, upper range . . . . .	C. Fleury . . . . .	May 24, 1912..	275	00
Gallia bay, lower range . . . . .	J. Cournoyer . . . . .	July 19, 1912..	275	00
Gentilly (front) . . . . .	L. Leboeuf . . . . .	Aug. 5, 1912..	275	00
Gentilly (back) . . . . .	D. Mailhot . . . . .	April 2, 1907..	220	00
Georgeville . . . . .	O. H. Hutchins . . . . .	June 21, 1913..	80	00
Grace, Ile de (front) . . . . .	B. Raquier . . . . .	July 19, 1912..	275	00
Grace, Ile de (back) . . . . .	L. Lavallée . . . . .	May 13, 1912..	150	00
Graham (front) . . . . .				
Graham (back) . . . . .	E. Lavigne . . . . .	Feb. 16, 1911..	90	00
Green shoal . . . . .	A. Laberge . . . . .	May 20, 1902..	260	00
Grenville ranges . . . . .	W. Davison . . . . .	Mar. 29, 1910..	250	00
Grondines (upper front) . . . . .	A. Rivard . . . . .	Nov. 25, 1912..	230	00
Grondines (upper back) . . . . .	O. Rivard . . . . .	Sept. 24, 1912..	150	00
Grondines point (front) . . . . .	H. Rivard . . . . .	Aug. 30, 1912..	335	00
Grondines point (back) . . . . .	F. Hamelin . . . . .	June 21, 1912..	150	00
Hebert point . . . . .	X. Hébert . . . . .	Sept. 30, 1910..	110	00



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STATEMENT of lightstations and names of lightkeepers, etc.—*Continued.*MONTREAL AGENCY *Continued.*

Name of Station.	Name of Lightkeeper.	Appointed.	Salary.	
			\$	cts.
Hochelaga range.....	U. Paquette.....	Sept. 1, 1910..	250	00
Jones island.....	J. Charlebois.....	April 22, 1909..	140	00
Lachine ranges.....	A. Lizotte, Jr.....	April 27, 1910..	305	00
Lacolle range.....	W. G. Whitman.....	Jan. 18, 1904..	220	00
Lac, Pointe du (front).....	C. Bourassa.....	June 25, 1913..	320	00
Lac, Pointe du (back).....	S. Paquin.....	May 2, 1900..	180	00
Langlois pointe.....	A. Langlois.....	July 11, 1888..	220	00
Laperle traverse range.....	A. Laperle.....	Aug. 7, 1912..	105	00
Lavaltrie range.....	J. O. Martineau.....	Jan. 20, 1912..	335	00
Lead Mines.....	W. Wheeler.....	June 1, 1891..	100	00
Longue pointe traverse range.....	A. Valiquette.....	Mar. 10, 1910..	210	00
L'Original.....	G. Seguin.....	May 8, 1894..	180	00
Lotbinière (front).....	Mrs. L. Beaudet.....	Sept. 3, 1903..	140	00
Lotbinière (back).....	M. Moraud.....	June 19, 1913..	120	00
Louiseville range.....	O. Plante.....	April 19, 1907..	220	00
McTavish point.....	J. Campbell.....	Nov. 18, 1896..	180	00
Madeleine, Cap, lower range (front).....	M. Hébert.....	May 11, 1888..	140	00
Madeleine, Cap, lower range (back).....	T. Arcand.....	June 21, 1912..	150	00
Madeleine, Cap, upper range (front).....	D. Montplasier.....	June 21, 1912..	125	00
Madeleine, Cap, upper range (back).....	L. Loranger.....	June 21, 1912..	150	00
Madeleine, Cap, village (back).....	T. Rocheleau.....	Aug. 8, 1912..	125	00
Madeleine, Cap, village (front).....	I. De Grandmont.....	Aug. 8, 1912..	125	00
Marcotte traverse range.....	F. Marcotte.....	Oct. 18, 1910..	110	00
Meule, Pointe à la, range.....	D. Menard.....	May 3, 1912..	230	00
Moine, Ile du (front).....	N. Salvail.....	May 15, 1912..	150	00
Moine, Ile du (back).....	P. Salvail.....	May 29, 1912..	190	00
Molson island.....	Miss E. G. Molson.....		140	00
Nicolet (front).....	D. Héroux.....	Dec. 5, 1906..	320	00
Nicolet (back).....	E. Héroux.....	Dec. 5, 1906..	180	00
Oka.....	A. Lacroix.....	July 24, 1912..	125	00
Oka wharf.....	T. Hamelin.....	July 23, 1912..	85	00
Pads, Ile du, range.....	P. Dandonneault.....	July 19, 1912..	335	00
Papineauville range.....	J. Chabot.....	June 17, 1897..	180	00
Perrot, Ile, range.....	O. D'Anjou.....	Sept. 15, 1913..	140	00
Petite, Ile course range.....	J. Paré.....	Aug. 7, 1912..	105	00
Petite traverse (front).....	E. Lavigne.....	April 22, 1912..	125	00
Petite traverse (back).....	H. Jussaume.....	April 22, 1912..	150	00
Platon range.....	C. Beaudet.....	Aug. 24, 1904..	220	00
Portneuf range.....	E. Paradis.....	April 10, 1912..	335	00
Raisins, Ile aux, range.....	L. Verville.....	May 13, 1912..	335	00
Repentigny (front).....	A. Payette.....	Feb. 4, 1913..	120	00
Repentigny (back).....	L. L. Rivet.....	April 28, 1894..	140	00
Richelieu.....	J. Auger.....	July 14, 1908..	220	00
Rigaud.....	O. Mallette.....	April 7, 1910..	210	00
Ronde, Ile (front).....	H. Charland.....	Aug. 1, 1907..	500	00
Ronde, Ile (back).....	J. B. Jodin.....	May 2, 1913..	320	00
Rosalie, Ile.....	A. Seguin.....	Oct. 29, 1912..	220	00
Ste. Anne lock.....	C. Duquette.....	Mar. 4, 1914..	140	00
Ste. Anne de Sorel (front).....	M. Razotte.....	May 10, 1912..	125	00
Ste. Anne de Sorel (back).....	M. Latraverse.....	May 10, 1912..	150	00
St. Charles point.....	A. Messier.....	Sept. 30, 1910..	110	00
St. Denis float light.....	A. Bourgeois.....	Aug. 9, 1913..	120	00
Ste. Emmelie (front).....	J. B. Gaudet.....	Jan. 9, 1911..	130	00
Ste. Emmelie (back).....	E. Filtreau.....	Mar. 16, 1905..	140	00
St. Francis, Port, range.....	F. Proulx.....	July 5, 1912..	335	00
St. Francis river range.....	P. Descheneau.....	Mar. 21, 1912..	230	00
St. Jean.....	E. Menard.....	Feb. 15, 1909..	220	00
St. Mark point.....	V. Ducharme, Jr.....	April 23, 1912..	105	00
St. Onge traverse range.....	A. Larivière.....	Nov. 22, 1910..	110	00
St. Ours traverse, Ile (front).....	G. Fortin.....	May 13, 1912..	130	00
St. Ours traverse, Ile (back).....	A. Gaudette.....	Oct. 24, 1908..	180	00
St. Ours Locks traverse, range.....	D. Lamoureux.....	June 19, 1912..	105	00
St. Peter, Lake (front).....	L. A. Lamy.....	Jan. 28, 1914..	320	00
St. Peter, Lake (back, down range).....	J. Lefevre.....	May 11, 1911..	350	00



## SESSIONAL PAPER No. 21

STATEMENT of lightstations and names of lightkeepers, etc.—(Continued.)

## MONTREAL AGENCY—Concluded.

Names of Station.	Name of Lightkeeper.	Appointed.	Salary.
			\$ cts.
St. Peter, Lake (back, up range)	Arthur Paquin	Nov. 7, 1913	320 00
St. Placide	H. Dubreuil	July 19, 1912	230 00
St. Roch range	P. Mathieu	July 25, 1913	100 00
Ste. Thérèse, upper range (front)	J. Poitras	Aug. 2, 1913	180 00
Ste. Thérèse, upper range (back)	A. Durochers	Aug. 2, 1913	140 00
Ste. Thérèse, lower range	J. Malo	Feb. 1, 1897	220 00
St. Valentin range	A. Martin	June 30, 1909	220 00
Sorel range	Richelieu & Ontario Navigation Co.	Sept. 6, 1854	95 00
Tetreauville range	A. David	Nov. 18, 1911	200 00
Three Rivers range	H. Roy	July 28, 1911	200 00
Varennes	W. Hébert	April 17, 1912	105 00
Verchères traverse (front)	E. Dansereau	April 13, 1912	125 00
Verchères traverse (back)	P. Charbonneau	April 21, 1902	120 00
Verchères village (front)	J. Guyon	April 21, 1902	140 00
Verchères village (back)	E. Chagnon	April 12, 1912	105 00
Wadleigh point	J. A. Patterson	June 1, 1891	100 00
Way channel and Besserer crossing	M. Beauchamp	Nov. 20, 1906	250 00
Way Shoal traverse	M. V. Proulx	Oct. 10, 1912	125 00
Windmill Point traverse range	O. Phaneuf	April 23, 1912	105 00
Witch shoal	D. E. Peters	June 1, 1891	260 00

## ONTARIO.

Allumette island	J. Cox	June 12, 1887	180 00
Allumette lake	J. T. Manders	Sept. 17, 1907	180 00
Arnprior island	W. Kilroy	Sept. 27, 1905	260 00
*Arthur, Port	J. C. Banks	Dec. 11, 1908	520 00
Aylmer island	F. Boucher	Nov. 17, 1882	260 00
Badgeley island range	O. Proulx	Feb. 3, 1912	395 00
Barriefield common range	W. Murray	May 17, 1900	260 00
Baril, Pointe au range	O. Hanson	July 10, 1907	440 00
Baskins wharf range	S. Sullivan	Dec. 22, 1896	220 00
*Battle island	E. McKay	April 4, 1913	600 00
Baymouth, South range	J. A. Ritchie	Sept. 10, 1903	220 00
Belleville	H. J. Smith	April 27, 1912	275 00
Bishops bay range	C. Flett	Nov. 7, 1913	220 00
Blind river range	W. H. McGauley	Jan. 5, 1909	60 00
Blind river, Eddy wharf range	Eddy Bros.	Oct. 27, 1905	60 00
Bois Blanc	C. R. Hackett	April 27, 1910	580 00
Boyd island	Mrs. Eliz. Martin	Jan. 6, 1905	380 00
Breboeuf range	W. J. Baxter	Nov. 23, 1885	440 00
Brighton (3 lights)	H. V. Simpson	May 11, 1888	520 00
*Bronte	C. Osborne	Dec. 7, 1906	260 00
Bruce Mines	W. Fleming	March 31, 1909	100 00
Buckom point	A. Ouellette	Feb. 22, 1913	220 00
Burlington bay, lights and fog alarm	T. Lundy	May 2, 1905	780 00
Burnt island	J. A. Acton	May 24, 1912	380 00
*Burwell, Port (3 lights)	J. Sutherland	June 18, 1894	520 00
Burwell, Port, inner range	J. Sutherland	Oct. 27, 1909	100 00
*Byng inlet (3 lights)	L. Lamondin	July 30, 1901	520 00
Cabot Head, light and fog alarm	L. Martindale	June 15, 1912	1,030 00
Campbell island	R. Wilson	July 6, 1905	260 00
Caribou Island, light and fog alarm	J. W. Johnston	May 3, 1912	1,260 00
Cecebe lake	R. Nicholson	Feb. 12, 1912	275 00
Centre Bro. island	J. Miller	Oct. 30, 1913	260 00
Chantry island	M. McIver	Feb. 16, 1907	680 00
Chenal Ecarte range	P. Willis	Dec. 3, 1908	180 00
Cherry island	I. S. Johnson	Nov. 5, 1883	380 00
*Christian island	A. Collins	March 25, 1891	600 00

\* \$25 for operating fog horn or bell.



STATEMENT of lightstations and names of lightkeepers, etc.—Continued.

ONTARIO—Continued.

Name of Station.	Name of Lightkeeper.	Appointed.	Salary.
			\$ cts
*Clapperton is'and	H. F. Baker	Dec. 2, 1895..	440 00
Clark, Point	M. McDonald (temporary keeper)		600 00
Cobourg, fog alarm engineer	J. Lavis	Aug. 1, 1910..	400 00
Colborne, Port, lights and fog alarm	H. Clark, Jr.	May 30, 1904..	1,180 00
Colborne, Port, east breakwater	J. Madden	May 22, 1911..	350 00
*Colchester reef	F. Malott	March 31, 1911..	930 00
Cole shoal	R. P. Boyd	April 9, 1884..	380 00
*Collingwood ranges	J. Wilde	Feb. 24, 1912..	460 00
Coppermine point	F. E. Roussain	Oct. 10, 1910..	210 00
*Corbeil point	J. Davieux	May 27, 1890..	440 00
Corunna range	W. J. Scott	April 23, 1901..	220 00
Coteau Landing	W. H. E. Filiatreault	April 10, 1912..	190 00
Coulonge lake	E. Bertrand	July 16, 1908..	180 00
Cove island, light and fog alarm	W. J. Simpson	July 5, 1912..	1,030 00
Credit, Port	J. Miller	Dec. 16, 1897..	260 00
Croker, Cape, light and fog alarm	W. Chapman	April 27, 1910..	1,130 00
Current, Little (3 lights)	I. Allan (temporary)	April 19, 1913..	380 00
Dalhousie, Port, lights and fog alarm	G. Houston	May 3, 1912..	705 00
Darlington	Port Darlington Co.	1886..	100 00
Deep River islet	J. Beauchamp	March 3, 1908..	180 00
Deseronto	Rathbun Lumber Co.	Oct. 14, 1884..	200 00
Dover, Port range	S. L. Butler	July 15, 1897..	440 00
Duck island, Great, light and fog alarm	N. R. Smith	Nov. 25, 1912..	1,030 00
Edward, Point, range	L. Knauff	May 23, 1908..	260 00
Elgin, Port, ranges	R. M. Lowry	Mar. 14, 1896..	220 00
False Ducks, light and fog alarm	J. W. Hudgin	May 3, 1912..	905 00
Ferris island	J. Morriseau	Mar. 24, 1898..	320 00
Flowerpot island, light and fog alarm	W. J. Spears	June 15, 1912..	905 00
Fort William, Ottawa river	C. L. McCool	May 17, 1911..	115 00
Fox island	Moses Emes	Dec. 10, 1912..	260 00
Frenchman bay	W. O'Brien	April 14, 1904..	220 00
* French river, and Bustard rocks, ranges	Mrs. E. B. Borron	Jan. 30, 1903..	680 00
Gananoque narrows	Thomas Glover	Feb. 3, 1914..	380 00
Jackstraw shoal			
* Gargantua	C. Miron	April 27, 1912..	540 00
Giants Tomb	A. H. Griffith	Sept. 17, 1898..	380 00
Gibraltar point	B. Matthews	28, 1912..	395 00
Goderich (3 lights)	W. Robinson	Apr. 12, 1911..	560 00
Goderich beacon	W. Robinson	" 12, 1911..	50 00
* Gore Bay	R. Lewis	" 18, 1913..	380 00
* Gravenhurst narrows	I. Barnes	Mar. 20, 1906..	180 00
Grenadier island	D. Root	Nov. 30, 1908..	320 00
* Griffith island	W. S. Boyd	May 14, 1889..	600 00
Hamilton island and Glengarry	R. Casgrain	April 6, 1906..	380 00
Hog island	A. Greenwood	April 25, 1912..	125 00
Hope island, light and fog alarm	T. Marchildon (lightkeeper)	Feb. 24, 1912..	555 00
	H. Chester (engineer)	Sept. 19, 1912..	625 00
Jackfish bay	B. Almos	Oct. 1, 1907..	100 00
Kagawong	W. M. Boyd	April 13, 1893..	120 00
Kaministiquia	J. Armstrong	" 28, 1894..	380 00
* Killarney, E. and W	J. Burke	July 5, 1912..	395 00
Kincardine range	W. G. Temple	April 30, 1913..	520 00
Kingsville range	W. H. Black	July 27, 1902..	260 00
* Knapp point	W. W. Card	April 10, 1912..	230 00
Knight point (4 lights)	W. Shannon	Sept. 27, 1866..	600 00
* Lamb island	A. Alexander	April 26, 1897..	680 00
* Lancaster pier and bar	J. J. Munroe	June 8, 1892..	520 00
Leamington	F. H. C. Conover	April 24, 1883..	260 00
Limekiln crossing range	S. Pettypiece	May 11, 1883..	350 00
Lindoe island	J. G. Wallace	" 24, 1912..	380 00
Lionhead	P. W. Brady	Sept. 14, 1912..	85 00
* Lonely island	J. Haitse	May 11, 1885..	880 00

\* \$25 for operating fog horn or bell.



## SESSIONAL PAPER No. 21

STATEMENT of lightstations and names of lightkeepers, etc.—*Continued.*ONTARIO—*Continued.*

Name of Station.	Name of Lightkeeper.	Appointed.	Salary.
			\$ cts.
Long point, E. E., light and fog alarm.....	S. B. Cooke.....	June 9, 1897..	1,180 00
Long point, W. E.....	F. E. Mason.....	June 3, 1901..	600 00
Lower narrows.....	J. B. LeBlanc.....	Jan. 4, 1904..	180 00
Lyal island.....	J. McKay.....	Oct. 27, 1884..	680 00
McKay island.....	J. Harvey.....	July 10, 1907..	380 00
McNicoll range.....	J. Beatty.....	Aug. 2, 1913..	260 00
McQuestion point.....	Mrs. E. McLeod.....	Feb. 22, 1904..	180 00
* Maitland, Port, range.....	Mrs. J. Grant.....	June 19, 1907..	440 00
Manitowaning.....	J. J. Morrow.....	May 3, 1912..	190 00
Meaford.....	S. Dutcher.....	May 7, 1877..	260 00
* Michipicoten harbour.....	W. T. Richardson.....	Sept. 27, 1900..	380 00
* Michipicoten and Agate island.....	C. Davieux.....	June 29, 1910..	580 00
Michipicoten island, E. E.....	Wm. Sherlock.....	Feb. 5, 1912..	620 00
Middle Island.....	J. Lidwell.....	May 16, 1911..	480 00
Midland point, range.....	T. Williams.....	July 19, 1912..	275 00
Mississagi island.....	L. D. McDonald.....	May 16, 1896..	600 00
Mississagi strait, light and fog alarm.....	W. A. Grant.....	Mar. 3, 1913..	980 00
Mitchell bay range.....	S. MacDonald.....	Feb. 22, 1912..	150 00
Mohawk island.....	R. O. Smithers.....	Mar. 3, 1896..	600 00
Morris island.....	A. Coburn.....	April 10, 1912..	190 00
* Narrow island.....	A. B. Boyter.....	Jan. 3, 1898..	380 00
Niagara-on-the-lake, lights and fog alarm.....	R. J. Allen, (lightkeeper)...	July 19, 1907..	260 00
	J. W. McMillan, (engineer)...	Nov. 30, 1910..	580 00
Nigger island.....	C. Jeffrey.....	April 28, 1894..	320 00
Ninemile point, light and fog alarm.....	S. Veech.....	Mar. 7, 1894..	980 00
* Nottawasaga island.....	Mrs. McNabb, (temporary)...		620 00
Oakville.....	M. Felan.....	April 28, 1894..	260 00
Onderdonk point.....	W. Allison.....	April 25, 1912..	150 00
* Otter island.....	R. McMenemy.....	Nov. 17, 1903..	600 00
Owen Sound, range.....	A. Robertson.....	Oct. 30, 1903..	260 00
Parisian island, light and fog alarm.....	J. Douglas (temporary).....		1,030 00
	S. Bottom.....	Nov. 12, 1910..	705 00
Pelee passage, light and fog alarm.....	G. Simpson, (1st assistant)...	July 5, 1912..	485 00
	H. Andrews, (2nd " )...	April 15, 1913..	310 00
Penetanguishene and Whisky island.....	C. Columbus.....	Mar. 18, 1893..	440 00
* Peninsula harbour.....	J. Blondin.....	Oct. 14, 1910..	660 00
Peter point, light and fog alarm.....	T. A. Farrington.....	Jan. 25, 1913..	905 00
Peter rock.....	S. Nichols.....	Nov. 7, 1913..	600 00
* Pie island.....	J. Vernon.....	Mar. 9, 1912..	335 00
* Pigeon island.....	J. H. Davis.....	May 16, 1896..	660 00
Pins, Pointe aux (3 lights).....	A. McKinnon.....	May 16, 1904..	520 00
Peasant, point.....	S. C. Carson.....	April 18, 1913..	380 00
Porphyry, point, light and fog alarm.....	J. Bosquet.....	Aug. 11, 1908..	1,080 00
Portsmouth range.....	E. Graham.....	April 27, 1912..	230 00
Presqu ile, light and fog alarm.....	F. T. Cornwall, (lightkeeper)...	May 24, 1912..	380 00
	H. C. McColl, (engineer)....	Feb. 27, 1914..	600 00
* Providence bay.....	T. E. Ellis.....	June 15, 1912..	335 00
Rains wharf.....	W. W. Rains.....	Aug. — 1892..	140 00
Rainy river.....	P. O'Connor.....	July 27, 1904..	395 00
Red Horse rock.....	A. Meggs.....	May 24, 1912..	395 00
Spectacle shoal.....			
* Red rock, light and fog alarm.....	A. Brown.....	June 2, 1909..	880 00
Richards landing.....	J. Burnside.....	April 3, 1912..	85 00
Robert, Cape.....	N. Matheson.....	Oct. 7, 1896..	440 00
* Rondeau, range.....	J. Claus.....	Oct. 30, 1913..	440 00
Rosseau.....	J. G. Dixon.....	July 21, 1890..	180 00
Sailors Encampment, range.....	A. M. Rains.....	Aug. — 1892..	180 00
* St. Anicet.....	D. McKillop.....	June 8, 1892..	380 00
Sand point.....	P. McLean.....	May 1, 1909..	100 00
Saugeen, range.....	A. McAulay.....	Aug. 30, 1909..	220 00
* Scotch Bonnet.....	B. Y. Cunningham.....	May 9, 1912..	460 00
* Shaganash.....	W. Fairael.....	May 24, 1912..	335 00
Sheguiandah, range.....	J. Heis.....	April 12, 1912..	150 00

\* \$25 for operating fog horn or bell



5 GEORGE V. A. 1915

STATEMENT of lightstations and names of lightkeepers, etc.—*Continued.*ONTARIO—*Concluded.*

Name of Station.	Name of Lighthouse.	Appointed.	Salary.	
			\$	cts.
*Snoal island	J. L. McCluskie	Sept. 11, 1909	380	00
Silver islet, range	J. Cross	May 18, 1905	180	00
*Sister rock, west	J. Thibault	Dec. 6, 1905	520	00
Slate islands	A. B. Sutherland	July 21, 1908	680	00
*Snake island	C. V. Sudds	Mar. 16, 1912	275	00
Southampton	J. Brown	June 29, 1904	260	00
South Bay point	W. Hudgins	June 15, 1912	275	00
South East bay	T. Darling	Jan. 31, 1891	140	00
South river	F. Baechler	July 2, 1903	180	00
Squaw island	W. H. Boucha	Oct. 30, 1913	275	00
Stag island	T. M. Cowan	Nov. 3, 1903	260	00
Stanley, Port, light and fog alarm	J. L. Oliver	Jan. 8, 1908	600	00
Stanley, Port, beacon	J. L. Oliver	Aug. 6, 1909	50	00
Stokes bay, range	J. McIver	Oct. 30, 1913	380	00
*Strawberry island	W. McKenzie	May 4, 1893	440	00
Stribling point, range	J. Hicks	April 10, 1912	275	00
Sulphur island	W. Birch	Aug. 1, 1910	425	00
Supple point	C. J. Kelly	Oct. 6, 1909	180	00
Telegraph island	M. Benn	Dec. 10, 1912	275	00
Thames island, range	H. J. Cartier	Oct. 19, 1884	520	00
*Thessalon	J. Harvey	Nov. 23, 1897	440	00
Thornbury, range	R. Lowe	April 12, 1887	140	00
Thunder cape, light and fog alarm	T. Craig	Nov. 27, 1913	980	00
*Tobermory	J. H. Smith	April 10, 1912	275	00
Tomahawk island	T. Sweeney	Sept. 19, 1902	320	00
Toronto, east pier, lights and fog alarm	G. McKelvie	Aug. 1, 1907	1,180	00
*Toronto, west entrance	F. Ward	Sept. 28, 1912	395	00
Trenton, range	J. A. McHenry	June 5, 1912	190	00
Victoria harbour, range	R. Belcher	Aug. 5, 1912	190	00
*Victoria island	F. Woodward	May 22, 1913	440	00
Wabi river	M. G. Hansman (temporary)		275	00
Welcome islands, light and fog alarm	Geo. Cosgrave	April 30, 1913	980	00
Western islands, light and fog alarm	E. Smith	Aug. 25, 1913	1,080	00
Whitby	R. Goldring	Dec. 2, 1911	200	00
Warton	E. Shackleton	Aug. 13, 1913	80	00
Wilson channel, range	Mrs. J. L. Bamford (temporary)		395	00
Wolfe island	W. Gillespie	Mar. 16, 1885	320	00

## MANITOBA.

*Black Bear island	D. Matheson	June 22, 1899	380	00
*Cox Reef	A. Anderson	June 2, 1913	440	00
*George island	E. Arrason	Aug. 26, 1912	460	00
Gimli	K. Samundsson	April 9, 1912	85	00
*Gull harbour	T. Fjeldsted	May 6, 1904	320	00
Red river range	Wm. Hughes	Feb. 12, 1892	520	00
Warren Landing ranges	H. McDonald	Sept. 14, 1907	520	00

## BRITISH COLUMBIA.

Active pass, light and fog alarm	H. Georgeson	July 21, 1884	1,470	00
Alberni	W. A. McIntosh	Aug. 25, 1913	180	00
Amphitrite point	G. W. Grant	Feb. 28, 1907	390	00
Atkinson point, light and fog alarm	T. D. Grafton	April 9, 1910	1,432	50
Ballenas islands, light and fog alarm	A. B. Gurney	Dec. 10, 1912	1,170	00
Bare point	J. C. Chalmers	Aug. 5, 1912	285	00
Beale cape, light and fog alarm	Harold Ward	Jan. 28, 1914	1,470	00

\*25 for operating fog horn or bell.



## SESSIONAL PAPER No. 21

STATEMENT of lightstations and names of lightkeepers, etc.—*Concluded.*  
BRITISH COLUMBIA—*Concluded.*

Name of Station.	Name of Lighthouse.	Appointed.	Salary.
			\$ cts.
*Berens island	W. H. Harrison	Oct. 29, 1912	412 50
Birnie island	G. Rudge	June 30, 1906	390 00
*Brockton point	W. D. Jones	Aug. 20, 1890	570 00
Carmanah, light and fog alarm	R. S. Daykin	Dec. 8, 1913	1,545 00
Crofton	H. Carter	Jan. 10, 1913	225 00
Denman island	H. Piercy	May 16, 1911	525 00
Discovery island, light and fog alarm	M. A. Croft	April 1, 1902	1,470 00
*Dryad point	C. Carpenter	Dec. 4, 1899	480 00
Egg island light and fog alarm	L. D. B. Drummond	Oct. 30, 1913	1,470 00
Entrance island, light and fog alarm	W. E. Morrissey	June 2, 1913	1,320 00
Estevan point, light and fog alarm	J. P. Jensen	May 27, 1910	2,000 00
*Fiddle reef	D. H. McNeil	Mar. 21, 1905	570 00
First narrows light and fog alarm	G. A. Harris	June 25, 1913	1,320 00
Fisgard	J. Goose	Oct. 13, 1909	570 00
Fraser river, North arm range	T. J. Thomas	Mar. 21, 1913	330 00
Fraser river and Garry point	A. A. Parker	Oct. 14, 1907	570 00
Fraser river lightship	M. O'Brien	Sept. 26, 1906	1,620 00
Gallows point fog bell	Western Fuel Co.	June 8, 1906	120 00
Green island	A. Dingwall	Feb. 11, 1911	1,395 00
Helen point fog bell	D. Tom	Mar. 2, 1910	240 00
Holland rock light and fog alarm	J. E. Gibson	Jan. 25, 1913	1,320 00
Ivory island light and fog alarm	F. Reuter	May 2, 1905	1,170 00
Kaslo	Kootenay Electric Co.		240 00
Kootenay lake, west arm	C. W. Burke		900 00
Kootenay lake, west arm	H. A. Master		900 00
Kootenay Landing	Canadian Pacific Ry. Co.	Apr. 10, 1909	120 00
Kootenay ranges	B. F. Merritt		360 00
Langara, light and fog alarm	J. Forsyth	Oct. 30, 1913	2,000 00
Lardo	Canadian Pacific Ry. Co.	Mar. 19, 1910	120 00
Lawyer islands light and fog alarm	F. W. B. Elsterman	Oct. 26, 1905	780 00
Lennard island	R. Pollock	July 21, 1908	2,000 00
Lookout island	A. Ellis	Dec. 1, 1906	390 00
*Lucy island	J. S. O. Ouellette	July 6, 1910	750 00
Masset range	Henry Weah	Sept. 5, 1913	390 00
Merry island	W. T. Franklin	Jan. 8, 1904	570 00
Meares spit	R. Riley		200 00
McCormick point	O. B. Ballard		216 00
McLoughlin point fog alarm	W. P. Daykin	July 4, 1912	1,470 00
Mudge, cape light and fog alarm	J. Davidson	June 27, 1898	1,170 00
Nanaimo harbour	H. B. Shaw	June 4, 1907	330 00
Needles point	F. B. Lucas		228 00
Nootka	H. T. W. Smith	Feb. 11, 1911	525 00
Pachena light and fog alarm	R. Clarke	Apr. 8, 1913	1,700 00
Patey rock	H. Moore	Jan. 27, 1911	255 00
Pilot bay	E. Montreuil	Dec. 10, 1907	570 00
Pine island light and fog alarm	D. B. McPhee	Jan. 7, 1913	1,545 00
*Pointer island	J. Codville	Oct. 24, 1900	570 00
*Porlier pass range	F. F. Allison	Apr. 14, 1903	660 00
*Portlock point	G. A. Watson	Apr. 12, 1911	525 00
Proctor range	J. W. Gallop	Apr. 20, 1900	600 00
*Prospect point	J. Grove	July 7, 1898	570 00
*Pulteney point	T. Aro	Nov. 14, 1913	480 00
*Quatsino	N. C. Nelson	Dec. 6, 1910	570 00
Race rocks light and fog alarm	F. M. Eastwood	Jan. 31, 1891	1,770 00
St. James, cape	Taylor Ash	Jan. 28, 1914	1,320 00
Saturna island	J. Georgeson	Oct. 26, 1889	900 00
*Scarlett point	W. Hunt	Sept. 24, 1908	570 00
Sheringham point	E. T. Arden	Aug. 30, 1912	1,357 50
Silverton	Denver Light & Power Co.		24 00
Sisters light and fog alarm	T. C. L. Hayllar	Dec. 10, 1912	1,057 50
Stubbs spit	R. Riley		200 00
Swale rock	J. C. Anderson	May 2, 1912	210 00
Trial island light and fog alarm	H. S. O'Kell	Oct. 24, 1906	1,470 00
Triangle island	T. Watkins	Mar. 28, 1913	1,320 00
Whiffen spit	P. H. Stuhr	Aug. 12, 1913	180 00
Wilson point	J. A. Irwin		120 00
Victoria harbour beacons	T. Sparks	Jan. 1, 1903	390 00
Yellow island lights and fog alarm	J. Doney	Feb. 6, 1906	1,170 00

\$37.50 for operating fog horn or bell.



5 GEORGE V., A. 1915

*Enclosure No. 3.*

STATEMENT showing complete list of stations at which gas buoys were in operation throughout the Dominion.

## UNDER THE NOVA SCOTIA AGENCY—DISTRICT No. 1.

Station No.	Name of Station.	Description of Buoy.
24	Pubnico . . . . .	Gas and whistling.
27	Cape Sable, southwest ledge . . . . .	"
29	Brazil Rock . . . . .	"
31	Shelburne . . . . .	"
35	Lockeport . . . . .	"
36	Laurier rock . . . . .	Gas and bell.
37	Little Hope . . . . .	Gas and whistling.
39	Liverpool . . . . .	"
40	Liverpool fairway . . . . .	Gas and bell.
45	Lahave . . . . .	"
48	Lunenburg . . . . .	Gas and whistling.
49	Lunenburg, east point ledge . . . . .	Gas and bell.
54	North east shoal . . . . .	Gas and whistling.
60	Sambro . . . . .	"
61	Outer Automatic, Halifax harbour . . . . .	"
62	Inner Automatic, Halifax harbour . . . . .	"
63	Neverfail, Halifax harbour . . . . .	Gas.
65	Thrumcap . . . . .	Gas and bell.
67	Middle Ground, Halifax harbour . . . . .	Gas.
68	Leopard shoal . . . . .	"
69	Shut-in-island . . . . .	Gas and bell.
70	Egg island . . . . .	Gas and whistling.
72	Sheet harbour . . . . .	"
76	Liscomb . . . . .	"
80	Isaac harbour . . . . .	"
84	Whitehead . . . . .	"
86	Canso or Grime shoal . . . . .	"
90	Cerberus rock . . . . .	"
94	Petitdegrat . . . . .	Gas and bell.
100	Guion island . . . . .	Gas and whistling.
102	Louisburg . . . . .	"
108	Flat point . . . . .	"
110	Cran rock . . . . .	Gas and bell.
112	North-west bar, Sydney harbour . . . . .	Gas.
117	Seal reefs . . . . .	"
130	Skinner reef . . . . .	"

## UNDER THE NEW BRUNSWICK AGENCY—DISTRICT No. 2.

4-S.	Blonde rock . . . . .	Gas and whistling.
6-S.	South-west fairway, Yarmouth . . . . .	"
8-S.	Cape Fourchu . . . . .	"
10-S.	Hen-and-chickens, Yarmouth . . . . .	Gas and bell.
12-S.	South west ledge, Brier island . . . . .	Gas and whistling.
14-S.	North west ledge, Brier island . . . . .	"
16-S.	Avon river . . . . .	Gas.
3	Old Proprietor . . . . .	Gas and whistling.
5	North Wolves . . . . .	"
7	Lepreau . . . . .	"
9	Black point . . . . .	"
18	Foul ground, St. John harbour . . . . .	Gas.
20	Quaco ledge . . . . .	Gas and whistling.
22	Trinity ledge . . . . .	"
24	Letite passage . . . . .	Gas and bell.
28	Maquacha spit, Restigouche river . . . . .	Gas.
31	Scaumenac, Restigouche river . . . . .	"
32	Point Lanin, Restigouche river . . . . .	"
34	Garde pointe, Restigouche river . . . . .	"
36	Oak point, Restigouche river . . . . .	"
38	Traverse, Restigouche river . . . . .	"
40	Busteed, Restigouche river . . . . .	"
42	Horseshoe bar east, Miramichi . . . . .	"
44	Horseshoe bar west, Miramichi river . . . . .	"
46	Caraquet harbour, east . . . . .	"
47	Caraquet harbour, west . . . . .	"



## SESSIONAL PAPER No. 21

STATEMENT showing complete list of stations at which gas buoys were in operation throughout the Dominion.—*Continued.*

## UNDER THE PRINCE EDWARD ISLAND AGENCY—DISTRICT No. 3.

Station No.	Name of Station.	Description of Buoy.
1	Indian Rocks .....	Gas and whistling.
2	Point Prim .....	"
3	Fitzroy rock .....	"
4	West point .....	"
5	Mischouche shoal .....	"
6	Zephyr rock, Shediac bay, N.B. ....	Gas.

## UNDER THE QUEBEC AGENCY—DISTRICT No. 4.

21 -B.	Matane .....	Gas and bell.
22 -B.	Manikuanagan point .....	Gas and whistle.
25 -B.	Cock point .....	Gas.
27 -B.	Father point .....	"
29 -B.	Rimouski road .....	"
38 -B.	Barrett ledge .....	Gas and bell.
51 -B.	Pilgrim shoal .....	"
56 -B.	Traverse, middle ground .....	Gas.
57 -B.	Lower Traverse .....	"
58 -B.	South Traverse, middle ground .....	"
59 -B.	Lower Traverse .....	"
60 -B.	Upper Traverse .....	"
61 -B.	St. Roch shoals .....	"
62 -B.	Channel patch, northeast .....	"
64 -B.	Channel patch .....	Gas and bell.
65 -B.	Port Joli .....	Gas.
66 -B.	Goose island reef .....	"
67 -B.	Beaujeu bank, northeast extremity .....	Gas and bell.
69 -B.	" west end .....	"
69½-B.	" channel .....	"
70 -B.	" bank, west end .....	"
71 -B.	St. Thomas channel, south side .....	"
72 -B.	" " north side .....	"
73 -B.	" " south side .....	"
73½-B.	" " southeast end .....	"
74 -B.	" " northeast end .....	"
75 -B.	" " south side .....	"
76 -B.	" " north side .....	"
77 -B.	" .....	Gas.
78½-B.	" .....	"
78½-B.	" .....	"
79 -B.	Wye rock .....	"
80 -B.	Grosse ile .....	"
84 -B.	Empress shoal .....	"
86 -B.	Madame island reef .....	"
87 -B.	Beaumont reef .....	"
89 -B.	Point Levis .....	"
96 -B.	Lark reef, south end .....	"
102 -B.	Morin shoal .....	"
106 -B.	Grande pointe .....	"
108 -B.	Longue pointe .....	"
110 -B.	Eastern narrows, north traverse .....	"
113 -B.	Traverse spit .....	"
138 -B.	Beauport flats .....	"
140 -B.	St. Charles river .....	"
10 -Q.	Fly bank .....	"
15 -Q.	Point Nicholas .....	"
23 -Q.	St. Antoine, middle ground .....	"
24 -Q.	Pointe aux Trembles .....	"
28 -Q.	Pointe St. Antoine .....	"
34 -Q.	Ste. Croix .....	"
36 -Q.	Ste. Croix bar .....	"
44 -Q.	Cap Santé .....	"
49 -Q.	Pointe Platon .....	"



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STATEMENT showing complete list of stations at which gas buoys were in operation throughout the Dominion.—*Continued.*

## MONTREAL DIVISION—DISTRICT No. 5.

Station No.	Name of Station.	Description of Buoy.
52-Q.	Portneuf.....	Gas.....
63-Q.	Ilet Mayrand.....	"
68-Q.	Batture Simon.....	"
73-Q.	Batture-du-Chêne.....	"
75-Q.	Batture-à-Cadieux.....	"
78-Q.	Cape Charles.....	"
90-Q.	Cap à la Roche curve.....	"
92-Q.	Cap à la Roche.....	"
97-Q.	Upper Cap à la Roche.....	"
105-Q.	Cap Levrard.....	"
110-Q.	".....	"
115-Q.	Batiscan course.....	"
117-Q.	".....	"
119-Q.	Batture St. Pierre.....	"
123-Q.	Batiscan anchorage.....	"
129-Q.	Batture Perron.....	"
2-C.	Pointe Citrouille.....	"
15-C.	Poulier Carpentier.....	"
20-C.	Ile Bigot.....	"
23-C.	Becancour, lower traverse.....	"
30-C.	Becancour bend.....	"
39-C.	Becancour, upper traverse.....	"
43-C.	Cap Madeleine.....	"
55-C.	Ile aux Cochons.....	"
59-C.	Three Rivers shoal.....	"
4-L.	Poulier Laforce.....	"
9-L.	English bank.....	"
13-L.	Curve No. 3.....	"
17-L.	" 3.....	"
21-L.	" 3.....	"
22-L.	" 3.....	"
25-L.	" 3.....	"
35-L.	Pointe du Lac course.....	"
47-L.	".....	"
57-L.	Yamachiche bend.....	"
58-L.	".....	"
67-L.	Curve No. 2 to White Buoy.....	"
79-L.	".....	"
85-L.	".....	"
91-L.	Curve No. 1 to Curve No. 2.....	"
97-L.	".....	"
100-L.	".....	"
103-L.	".....	"
111-L.	Ile aux Raisins.....	"
123-L.	Pointe aux Soldats.....	"
136-L.	Ile de Grace.....	"
146-L.	Nepigon shoal.....	"
1-M.	Ile aux Foins.....	"
5-M.	St. Ours traverse.....	"
16-M.	Bellmouth curve.....	"
20-M.	".....	"
24-M.	".....	"
31-M.	Contrecoeur bend.....	"
45-M.	" junction.....	"
82-M.	Plum island.....	"
89-M.	Verchères.....	"
103-M.	Poulier des Trois Bouées.....	"
117-M.	Cap St. Michel.....	"
124-M.	Ile des Lauriers.....	"
129-M.	Varennas curve.....	"
133-M.	".....	"
141-M.	".....	"
149-M.	Pointe aux Trembles bend.....	"
157-M.	" " curve.....	"
167-M.	" " ".....	"
174-M.	Longue Pointe.....	"



## SESSIONAL PAPER No. 21

STATEMENT showing complete list of stations at which gas buoys were in operation throughout the Dominion.—*Continued.*

MONTREAL DIVISION—DISTRICT No. 6—*Continued.*

Station No.	Name of Station.	Description of Buoy.
175-M.	Longue Pointe, above.....	Gas.
177-M.	Poulier à Gagnon.....	"
181-M.	Longueuil .....	"
191-M.	" .....	"
193-M.	" .....	"
194-M.	Maisonneuve.....	"
195-M.	Ile Ronde.....	"
196-M.	Longueuil.....	"
201-M.	Montreal harbour .....	"

## PRESCOTT—DISTRICT No. 6.

16-S.	Four-fifth mile above Lachine .....	Gas.
38-S.	Lachine cut, upper entrance .....	"
48-S.	East of Lightship No. 2.....	"
53-S.	Off Browns point. ....	"
76-S.	Between Light No. 2 and Light No. 3.....	"
86-S.	Between top light and Ile Perrot .....	"
98-S.	Windmill point.....	"
100-S.	Entrance to Soulanges canal, east.....	"
102-S.	" .....	"
104-S.	Soulanges canal, east.....	"
25-F.	Grosse point.....	"
30-F.	Soulanges canal, entrance .....	"
36-F.	Coteau Landing.....	"
40-F.	Hay point.....	"
43-F.	West end of middle ground .....	"
46-F.	Port Lewis.....	"
48-F.	Pointe Mouillé flats.....	"
64-F.	Lancaster .....	"
68-F.	Island bank .....	"
69-F.	East Lancaster bar.....	"
76-F.	Lancaster bar.....	"
78-F.	Squaw island.....	"
83-F.	Renshaw island.....	"
84-F.	Clarks island.....	"
87-F.	Grass island .....	"
96-F.	St. Regis dyke, west end.....	"
6-U.	Delaney shoal.....	"
8-U.	Archibald shoal.....	"
40-U.	Farran point.....	"
54-U.	Prunner shoal. ....	"
72-U.	Jackass shoal .....	"
127-U.	Dixon island .....	"
138-U.	Upper entrance, Iroquois canal .....	"
4-T.	Hillcrest.....	"
6-T.	Cole shoal, middle ground.....	"
7-T.	Deer island.....	"
12-T.	Gananoque narrows. ....	"
38-T.	Wolfe island .....	"
46-T.	Cold Bath shoal .....	"
61-T.	Penitentiary shoal.....	"
69-T.	West end of middle ground between Snake island and Seven Acre shoal.....	"
89-T.	Forester island .....	"
102-T.	Northport shoal .....	"
106-T.	Minnie Blakely shoal .....	"
110-T.	Trenton .....	"
121-T.	Salt point .....	"



STATEMENT showing complete list of stations at which gas buoys were in operation throughout the Dominion.—Continued.

ONTARIO DIVISION—LAKE ONTARIO—DISTRICT No. 7.

Station No.	Name of Station.	Description of Buoy.
1	Niagara.....	Gas and bell

LAKE ERIE—DISTRICT No. 8.

6	Grub reef.....	Gas.
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DETROIT RIVER—DISTRICT No. 9.

13-D.	Bar Point channel.....	Gas.
14-D.	".....	"
23-D.	".....	"
24-D.	".....	"
32-D.	".....	"
38-D.	Hackett reach.....	"
67-D.	Limekiln crossing.....	"
68-D.	".....	"
73-D.	".....	"
74-D.	".....	"
79-D.	Ballard reef channel.....	"
80-D.	".....	"
81-D.	".....	"
82-D.	".....	"
83-D.	".....	"
84-D.	".....	"
90-D.	South end Fighting island.....	"

THAMES RIVER DISTRICT No. 11.

1	Thames river.....	Gas.
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ST. CLAIR RIVER—DISTRICT No. 12.

1	Courtwright.....	Gas.
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SOUTHAMPTON—DISTRICT No. 15.

4	Chantry island, north.....	Gas.
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GEORGIAN BAY—DISTRICT No. 16.

Cove island.....	Gas and whistling.
Vails point.....	Gas and bell.
Hooper island.. ..	Gas.
Middle ground .....	"
Three Star shoal.....	"
Seguin bank.....	Gas and whistling.
Lone rock. . . . .	"
Lockerbie rock. . . . .	Gas.
Surprise shoal.....	Gas, whistling and bell.
Kennedy bank.....	Gas.
Lottie Wolf Shoal.....	"
Bennett bank.....	"
Port McNicoll.....	"
Maganatawan ledges.....	"
Entrance Key inlet .....	"
Murray Bend inlet.....	"
Keefer Bend inlet.....	"
Digsby inlet.....	"
Mann Reef inlet.....	"
Inside Reef inlet.....	"



## SESSIONAL PAPER No. 21

STATEMENT showing complete list of stations at which gas buoys were in operation throughout the Dominion.—*Continued.*

## ONTARIO DIVISION—STURGEON RIVER—DISTRICT No. 17.

Station No.	Name of Station.	Description of Buoy.
1-N.	Sturgeon bar .....	Gas.

## SAULT STE. MARIE—DISTRICT No. 18.

1	Vidal shoal, north side, upper end .....	Gas.
2	Vidal shoal, south side, upper end .....	"
3	Vidal shoal, north side, lower end .....	"
4	Upper entrance, south side .....	"
5	Upper entrance, north side .....	"
7	Lower entrance, north side .....	"
8	Pancake shoal .....	" and bell.

## PORT ARTHUR—DISTRICT No. 19.

1	Port Arthur .....	Gas.
2	Southeast dredged channel, Fort William .....	" and bell.
3	Northeast " " .....	"
4	Hare island reef .....	Gas and bell.
6	Thunder Bay channel .....	"

## BRITISH COLUMBIA DIVISION—DISTRICT No. 24.

1	Lookout island .....	Gas beacon.
2	Kyuquot .....	Gas and whistling.
18	Channel rocks .....	"
19	San Juan .....	"
23	Lewis reef .....	Gas beacon.
24	Kelp reef .....	"
25	Dock island .....	"
25-A.	Sananns island .....	"
26	Canoe rock .....	"
27	Helen point .....	"
28	Mary Ann point .....	"
29	Walker rock .....	"
30	Coffin islet .....	"
31	Danger reef .....	"
32	Joan point .....	"
33	Gabriola reef .....	"
35	Roberts bank .....	Gas and whistling.
36	Grey point .....	Gas and bell.
37	First narrows, Vancouver harbour .....	Gas beacon.
40	Seechelt .....	"
42	Gallows point, Nanaimo harbour .....	"
43	West rocks .....	"
44	Goose spit .....	"
45	Kelp bar .....	Gas and bell.
47	Oyster bay .....	"
49	Lund .....	Gas beacon.
50	Cortez island .....	Gas and bell.
52	Gillard island .....	Gas beacon.
53	Maud island .....	"
54	Chatham point .....	"
55	Green point .....	"
56	Helmcken island .....	"
57	Boat harbour .....	"
58	Haddington reef .....	Gas.



STATEMENT showing complete list of stations at which gas buoys were in operation throughout the Dominion.—*Concluded.*

BRITISH COLUMBIA DIVISION—DISTRICT No. 24.—*Concluded.*

Station No.	Name of Station.	Description of Buoy.
60	Crane island.....	Gas beacon.
64	Zero rock .....	"
67	Fog rocks .....	"
69	Camp island .....	"
70	Dall patch .....	Gas and whistling.
72	Vancouver rock.....	"
73	Jorkins point.....	Gas beacon.
74	Boat bluff .....	"
76	Separation point.....	"
84	Klewnuggit.....	"
85	Connis island.....	"
86	Watson rock.....	"
87	Herbert reef.....	"
88	Marked tree bluff, Kennedy island .....	"
92	Casey point .....	Gas.
93	Georgia rock .....	Gas and bell.
94	Spire ledge .....	Gas.
95	Barret rock.....	Gas and bell.
96	Coast island .....	Gas beacon.
97	Ridley island .....	"
101	Alford rock.....	Gas.
103	Hodgson reef.....	Gas and whistling.
105	Pointers.....	Gas beacon.
107	Browning entrance.....	Gas and whistling.
109	Dead Tree point .....	Gas.
110	Lawn point, Skidegate .....	Gas and bell.
111	Low island .....	Gas beacon.
112	Copper island.....	"
114	Koya point.. ..	"
116	Rose spit.....	"
118	Tripple island .....	"
120	Aiskew island .....	"

(Enclosure No. 4).

STATEMENT showing new buoys and beacons established during the fiscal year 1913-14

Nova Scotia—

Laurier rock.....	Gas and bell.
Shutin island.....	" "
Cran rock.....	" "

New Brunswick—

Trinity ledge.....	Gas and whistle.
Letite passage.....	" bell.

Quebec—

22-B Manikuagan point.....	Gas and whistle.
59-B Upper Traverse .....	Gas.
61-B St. Roch shoals.....	"
108-B Long point.....	"
113-B Traverse spit.....	"
140-B St. Charles river.....	"
23-Q St. Antoine.....	"

Montreal—

63-Q Ilet Mayrand.....	Gas.
175-M Above Longue pointe.....	"



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STATEMENT showing new buoys and beacons established during the fiscal year  
1913-14—*Concluded.*

Prescott—	
7-T Deer island.. . . .	Gas.
89-T Foresters island.. . . .	"
121-T Salt point.. . . .	"
Parry Sound—	
Port McNicoll.. . . .	Gas.
Sault Ste. Marie—	
Lower entrance.. . . .	Gas.
Pancake shoal.. . . .	Gas and bell.
Port Arthur—	
Thunder Bay channel.. . . .	Gas.
British Columbia—	
Channel rocks.. . . .	Gas and whistle.
Sananus island.. . . .	Gas beacon.
Green point.. . . .	" "
Dead Tree point.. . . .	Gas buoy.
Rose spit.. . . .	Gas beacon.
Tripple island.. . . .	" "
Aiskew island.. . . .	" "

(Enclosure No. 5).

STATEMENT, by localities, giving the number of unlighted buoys, stakes and bushes, etc.,  
maintained throughout the Dominion.

NEW BRUNSWICK DISTRICT.

Name of locality ; and No. of stakes, bushes, etc.	No. of Buoys.	Name of locality ; and No. of stakes, bushes, etc.	No. of Buoys.
Aldouane, 25 bushes.. . . .	5	Miramichi river, Black brook.. . . .	3
Alma.. . . .	3	Miramichi river, southwest branch.. . .	9
Baie Verte and Port Elgin, 30 stakes..	6	Miramichi river, northwest branch.. . .	10
Bartibog, 12 bushes.. . . .	1	Miscou.. . . .	8
Bathurst.. . . .	26	Musquash.. . . .	4
Baie du Vin.. . . .	13	Neguac.. . . .	19
Beaver and Black harbours.. . . .	8	Napan river, 24 stakes.. . . .	3
Buctouche, 34 stakes.. . . .	22	Petit Rocher.. . . .	1
Buctouche river, 260 bushes.. . . .		Pisarinco.. . . .	2
Campobello.. . . .	10	Pokemouche, bushes.. . . .	6
Caraquet.. . . .	15	Richibucto and Albion.. . . .	35
Caraquet to Mizzenette.. . . .	3	Richibucto, Rexton and Browns yard..	30
Chance harbour.. . . .	2	Salmon river, bushing.. . . .	15
Cocagne, 30 stakes.. . . .	11	Scotchtown.. . . .	6
Dalhousie and Restigouche.. . . .	10	Shampers wharf, 15 stakes.. . . .	
Digdequash.. . . .	5	Shediac.. . . .	19
Dipper harbour.. . . .	4	St. Andrews, 3 stakes.. . . .	16
Dorchester.. . . .	3	Shippigan, 17 pickets, 14 stakes.. . .	20
Grande Anse.. . . .	4	St. John river, 154 stakes.. . . .	73
Grande Digue, 30 stakes.. . . .	2	St. Louis, 35 bushes.. . . .	9
Grand lake, bushes.. . . .	32	St. Simon bay.. . . .	4
Grand Manan, 1 spindle.. . . .	28	Tabusintac.. . . .	20
Grassy island, 18 stakes.. . . .	7	Tracadie, north gully, 100 bushes.. . .	12
Great Shemogue.. . . .	7	Tracadie, south gully, 30 bushes.. . .	5
Hatfield point, number of bushes.. . .		Tynemouth creek.. . . .	4
Indian Point Bar channel, 10 bushes..	3	Washadamoak, 144 bushes.. . . .	2
Kouchibouguac and Black Lands gully, bushes.. . . .	12	Waweig river.. . . .	2
Letite, L'Etang and Bliss harbour.. . .	14	West isles, 4 spindles.. . . .	23
Little Shemogue, 2 poles.. . . .	5	Maintained by agency—	
Little Shippigan.. . . .	3	Bell buoys.. . . .	23
Magaguadavic.. . . .	13	Whistling buoys.. . . .	7
Maquapit and French lakes, 17 stakes..	8	Conical and can buoys.. . . .	48
Miramichi bay and river, bushes.. . . .	37	Spar buoys.. . . .	38



STATEMENT, by localities, giving the number of unlighted buoys, stakes, etc.—*Con.*

## NOVA SCOTIA DISTRICT.

Name of locality; and No. of stakes, bushes, etc.	No. of Buoys.	Name of locality; and No. of stakes, bushes, etc.	No. of Buoys.
Advocate harbour.. . . .	6	Bear river.. . . .	8
Amherst basin.. . . .	4	Beaver harbour, 8 winter buoys.. . . .	8
Apple river.. . . .	8	Beaver narrows, C.B.. . . .	2
Ardoise.. . . .	5	Blandford.. . . .	5
Arichat.. . . .	20	Bridgewater.. . . .	7
Argyle river and sound.. . . .	10	Brule, 5 stakes.. . . .	4
Avon river.. . . .	5	Calf island bay.. . . .	5
Barrington, 11 dolphins.. . . .	40	Canning or Habitant river, 6 dolphins.	
Canso and St. Andrew passage, 20 win- ter buoys.. . . .	26	Neil harbour.. . . .	1
Cape Negro or Northeast harbour.. . .	17	Northport.. . . .	12
Caribou.. . . .	6	North Sydney.. . . .	5
Chester and Gold river.. . . .	29	Orangedale.. . . .	3
Cheticamp.. . . .	12	Parrsboro.. . . .	6
Chezzetcook and Petpeswick.. . . .	10	Pennant harbour.. . . .	9
Christmas island and Barra strait.. . .	11	Petitdegrat, 6 winter buoys.. . . .	13
Clarke harbour.. . . .	17	Pictou.. . . .	10
Cockerwit pass.. . . .	19	Pope harbour.. . . .	1
Coddle harbour.. . . .	6	Port Bickerton, 3 winter buoys.. . . .	5
Cooks cove (Toby cove).. . . .	4	Port Felix, 1 stake.. . . .	11
Crooked channel.. . . .	5	Port l'Hébert.. . . .	13
Crow harbour.. . . .	3	Port Hood, 2 winter buoys.. . . .	5
Denny river.. . . .	3	Port Latour.. . . .	16
D'Escousse and Lennox passage.. . . .	29	Port Medway.. . . .	4
Digby and Annapolis, 5 winter buoys..	14	Port Morien.. . . .	2
Dover.. . . .	4	Port Mouton.. . . .	9
East bay, Bras d'Or.. . . .	5	Port Philip.. . . .	12
East Dover.. . . .	4	Pringle harbour.. . . .	3
Eskasoni.. . . .	4	Pubnico.. . . .	21
Fourchu harbour.. . . .	11	Pugwash.. . . .	9
Freeport, 1 beacon.. . . .	3	River John, stakes.. . . .	3
French village, St. Margaret bay.. . .	5	Roseway.. . . .	5
Gegoggin.. . . .	7	St. Anns.. . . .	10
Gillis point, Boulacet.. . . .	1	St. Mary river, winter buoys.. . . .	9
Glace bay.. . . .	4	St. Mary river to Sherbrooke.. . . .	18
Goose bay, 35 stakes.. . . .	8	St. Peter bay, 4 winter buoys.. . . .	16
Great Bras d'Or.. . . .	7	St. Peter inlet.. . . .	10
Guysborough.. . . .	5	Sambro.. . . .	15
Havre Bouché, 6 stakes.. . . .	4	Shad bay.. . . .	4
Indian harbour.. . . .	4	Shag harbour.. . . .	17
Ingonish, South bay.. . . .	9	Shelburne.. . . .	25
Isaac harbour, 9 winter buoys.. . . .	13	Sheet harbour, 5 winter buoys.. . . .	9
Jeddore, winter buoys.. . . .	9	Ship harbour (Lower), 6 winter buoys.	11
Johnson harbour.. . . .	5	Ship rock, strait of Canso.. . . .	1
Judique.. . . .	1	Shulee.. . . .	8
Ketch harbour.. . . .	6	Smith island.. . . .	1
Kieley cove, Blind bay.. . . .	4	Sober island to Ecum Secum.. . . .	22
Lahave.. . . .	6	Spry bay.. . . .	4
Larry river, 7 stakes.. . . .	3	Stoney island, Baddeck.. . . .	1
Liscomb.. . . .	6	Sydney inner harbour.. . . .	2
Little Bras d'Or.. . . .	12	Tancook island.. . . .	3
Little Dover.. . . .	9	Tangier, 7 winter buoys.. . . .	4
Little Narrows.. . . .	10	Tatamagouche, 46 stakes.. . . .	18
Liverpool.. . . .	10	Terence bay.. . . .	3
Lunenburg.. . . .	8	Three-Fathom harbour.. . . .	5
Lunenburg, back cove.. . . .	9	Tidnish, stakes.. . . .	5
Lunenburg, middle south, 6 winter buoys.. . . .	16	Torbay.. . . .	19
Louisburg, 3 winter buoys.. . . .	8	Tusket river.. . . .	9
Lower Prospect.. . . .	10	Tusket Wedge, 3 spindles.. . . .	17
Mabou, stakes.. . . .	19	Upper Prospect.. . . .	4
Margaree harbour, 2 stakes.. . . .	7	Volgers cove.. . . .	3
Mahone bay.. . . .	9	Wallace, 33 stakes.. . . .	11
Mainadieu.. . . .	5	Walton harbour.. . . .	1
Marble Mountain.. . . .	5	Washaback river.. . . .	1
Marie Joseph, 10 winter buoys . . . .	16	West bay.. . . .	5
Martins brook.. . . .	6	West Chezzetcook.. . . .	7
McKinnon harbour.. . . .	6	West Dublin.. . . .	12
McNab cove.. . . .	2	Weymouth.. . . .	19
		Whitehaven, 5 winter buoys.. . . .	8
		Yarmouth, 38 bushes.. . . .	13



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STATEMENT, by localities, giving the number of unlighted buoys, stakes, etc.—*Con.*NOVA SCOTIA DISTRICT—*Concluded.*

Name of locality ; and No. of stakes, bushes, etc.	No. of Buoys.	Name of locality ; and No. of stakes, bushes, etc.	No. of Buoys.
McVarish shoal and Campbell point, Bras d'Or... ..	4	Maintained by agency—	
Merigomish, bushes... ..	6	Bell buoys... ..	42
Meteghan river... ..	2	Whistling buoys... ..	16
Monsellier, 4 stakes... ..	6	Conical and can buoys... ..	68
Musquodoboit... ..	7	Spherical buoys... ..	3
		Spar buoys... ..	20

## PRINCE EDWARD ISLAND DISTRICT.

Bay Fortune... ..	3	Murray harbour, 24 stakes... ..	37
Beach point... ..	3	New London, stakes... ..	11
Bedeque, stakes... ..	4	North river, 14 stakes... ..	3
Belle river... ..	3	Orwell and Vernon river, 36 bushes, 3 beacons... ..	3
Brae harbour... ..	5	Pinette, bushes... ..	8
Brudenell river... ..	5	Port Hill... ..	12
Cardigan, lower, 2 winter buoys... ..	7	Pownall, 10 stakes... ..	9
Cardigan, upper... ..	20	Rollo bay... ..	3
Casumpeque... ..	16	Rustico... ..	5
Covehead... ..	3	Savage harbour... ..	2
Crapaud, stakes... ..	6	Souris... ..	4
East river, stakes and bushes... ..	12	St. Peter harbour, 6 stakes... ..	5
Egmont bay, north, 16 stakes... ..	7	Summerside, stakes... ..	7
Egmont bay, south, 8 stakes... ..	2	West point... ..	2
Georgetown... ..	19	West river, stakes... ..	8
Goose and Palmer harbours... ..	5	Wood island... ..	4
Grand river, 1 beacon, bushes... ..	12	Maintained by agency—	
Grand river, Lot 14... ..	8	Bell buoys... ..	4
Grand Tracadie... ..	4	Whistling buoys... ..	4
Little channel... ..	3	Conical and can buoys... ..	14
Malpeque... ..	16	Spar buoys... ..	9
Miminegash... ..	6	Steel barrel... ..	1
Montague, 10 stakes... ..	7		

## QUEBEC DISTRICT.

Anse à Beaufile... ..	1	Magdalen islands, Amherst harbour... ..	8
Anse aux Gascons... ..	1	Magdalen islands, Grand Entry... ..	17
Barachois de Malbaie... ..	1	Magdalen islands, House harbour... ..	11
Beauport... ..	3	Maria... ..	2
Bonaventure river... ..	11	Matane... ..	2
Cap Chat... ..	1	Natashkwan... ..	3
Cape Cove... ..	1	New Richmond... ..	3
Cap d'Espoir... ..	1	North channel, island of Orleans... ..	13
Carleton point... ..	1	Nouvelle... ..	2
Eschourie rock (Serpent reef)... ..	1	Paspebiac... ..	1
Fox river... ..	1	Pentecost... ..	1
Gaspé... ..	6	Percé... ..	2
Gros Cap-aux-Os... ..	1	Point St. Peter... ..	1
Lake St. John... ..	14	Port Daniel... ..	1
Lake St. John, Ashuapmouchuan river, 30 bushes... ..	7	Restigouche river... ..	12
Lake St. John, Mistassini river, 60 bushes... ..	12	Ste. Anne river... ..	1
Lake St. John, Peribonka river and Roberval, 35 bushes... ..	16	St. Godfroy... ..	1
Little river east... ..	1	St. Michel... ..	4
Little river west... ..	1	St. Thomas de Montmagny... ..	8
Magdalen islands... ..	12	Saguenay river, vicinity of Chicoutimi... ..	33
		Maintained by agency—	
		Conical and can buys... ..	31

## MONTREAL DISTRICT.

Lake Memphramagog... ..	1	St. Maurice river, Grandes Piles et La tuque, land marks and buoys... ..	
Richelieu river, above St. Johns... ..	27	Maintained by agency—	
Richelieu river, Sorel to Chambly... ..	37	Conical and can... ..	43
Richelieu rapids, bushes... ..		Spar buoys... ..	280
Rivière des Prairies... ..	11		



STATEMENT, by localities, giving the number of unlighted buoys, stakes, etc.—*Con.*

ONTARIO DISTRICT.

Name of locality ; and No. of stakes, bushes, etc.	No. of Buoys.	Name of locality ; and No. of stakes, bushes, etc.	No. of Buoys.
Blind river . . . . .	5	River Thames . . . . .	7
Brule shoal, lake Superior . . . . .	1	Rondeau . . . . .	6
Burke shoal, lake Superior . . . . .	1	St. Clair river, chenal Ecarté . . . . .	1
Cache bay, lake Nipissing, 8 stakes . . . . .		St. Joseph channel, lake Huron, 6 win- ter buoys, 1 beacon . . . . .	18
Clapperton channel, 1 beacon . . . . .	9	Sault Ste. Marie canal approaches . . . . .	25
Detroit river . . . . .	25	South Baymouth . . . . .	4
Goderich . . . . .	5	Stokes bay . . . . .	6
Grand reef, lake Superior . . . . .	1	Saugeen river . . . . .	7
Kaministikwia river, Fort William, lake Superior . . . . .	15	Sturgeon river . . . . .	25
Lake Simcoe . . . . .	5	Timagami lake, 4 beacons . . . . .	31
Lake Superior, south eastern part . . . . .	7	Trent canal (maintained by dept. Rail- ways and Canals number of buoys . . . . .	
Lake Timiskaming, bushes . . . . .	9	Victoria island, lake Superior . . . . .	3
Lake of the Woods . . . . .	264	Waubauskene . . . . .	53
Little Current . . . . .	9	Warrens landing, lake Winnipeg . . . . .	12
Michipicoten . . . . .	6	Winnipeg river . . . . .	13
Midland . . . . .	6	Maintained by Parry Sound agency—	
Mutton island, lake Superior . . . . .	1	Bell buoys . . . . .	2
Niagara river mouth . . . . .	2	Conical buoy . . . . .	1
Orillia, 11 bushes . . . . .	8	Spar buoys . . . . .	112
Pembroke . . . . .	23	Maintained by Prescott agency—	
Penetanguishene . . . . .	10	Conical, can, spherical . . . . .	17
Point au Baril, 15 beacons . . . . .	4	Barrel buoys . . . . .	2
Port Arthur . . . . .	20	Spar buoys . . . . .	98
Port Rowan . . . . .	10		
Presqu'île bay, lake Ontario . . . . .	17		

BRITISH COLUMBIA DISTRICT.

Arrow lakes, Upper and Lower . . . . .	15	Maintained by agency—	
Coal harbour . . . . .	10	Bell buoys . . . . .	3
Fraser river . . . . .	25	Whistling buoys . . . . .	2
Kootenay lake, northwest arm . . . . .	11	Conical and can buoys . . . . .	48
South Thompson river, 4 day beacons . . . . .	18	Platform buoys . . . . .	34
		Spar buoys . . . . .	50



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## APPENDIX No. 3.

## RIVER ST. LAWRENCE SHIP CHANNEL.

OTTAWA, August 3, 1914.

The Deputy Minister of Marine and Fisheries,  
Ottawa, Ont.

SIR,—I have the honour to present the following annual report on the operations for the improvements of the River St. Lawrence Ship Channel during the fiscal year ending March 31, 1914.

I have the honour to be, sir,

Yours obediently,

V. W. FORNERET, B.A.Sc.,

*Superintending Engineer.*

## HISTORY OF THE SHIP CHANNEL.

The St. Lawrence, owing to its situation, is the natural route from the Atlantic to the northern and northwestern half of the North American continent.

The opening of the Lachine canal, connecting Montreal with the Great Lakes, in 1825, established the route commercially.

The light-draught sailing vessels could then reach Montreal without trouble, except during a few weeks in the autumn, when they resorted to lightering.

In 1844, it was in an effort to give navigation up to Montreal for vessels of 500 tons, that the first work of dredging was undertaken.

The first proposals for improvements were discussed in 1825, the national character of the work being then recognized. Surveys were made and reported upon in 1831 and again in 1838.

In 1841, during an investigation, the committee proposed a tonnage duty sufficient to provide for the cost of the improved channel, which was considered would be less than that of lighterage. It was, however, agreed that in order to draw produce of the west down the St. Lawrence it was expedient to make the transit charges as light as possible.

Operations were commenced by the "Board of Works" in 1844 and continued until 1847 when, owing to opposition as to the location of the channel, in lake St. Peter, the work was abandoned.

After sixty years it is now considered that the straight channel as commenced would have been preferable in many ways.

In 1850, the harbour commissioners of Montreal proposed that they could do the work more economically and expeditiously. They asked for authority to undertake the work and to charge a tonnage duty to pay for the 8 per cent interest and 2 per cent sinking fund.

This plan was adopted in August, 1850, and the commissioners were authorized to proceed in such a manner as they should deem best, the Government plant being transferred to them.

The harbour commissioners, after examination and the best advice obtainable, adopted the location of the deepest natural channel in lake St. Peter. This results in the present channel with five tangents, instead of two long straight courses as at first commenced.



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The original depth through lake St. Peter was 10 feet 6 inches.

From 1850 the channel was deepened from stage to stage until in 1888, when the debt amounted to somewhat over three million dollars, the Government decided to complete the channel as a national work, and to assume the debt and from that day the channel has been open free to the commerce of the world.

At that date the channel had been deepened to 27½ feet at ordinary low water from Montreal to Cap à la Roche, and from there to Quebec the tide was available.

The work was then conducted by the Department of Public Works of Canada, from 1889 until 1904, when the management and control of the river, together with the ships and dredges, were handed over to the Department of Marine and Fisheries, which department had general charge of navigation.

When the Department of Public Works was given charge of the enterprise in 1889, it set out to provide a channel with a depth of 30 feet at extreme low water, with a minimum width of 450 feet upon the straight portions, and from 550 feet to 750 feet wide at the curves, with an anchorage of 800 feet wide at "White Buoy Curve" in lake St. Peter. The Government programme at that date did not contemplate any work below Quebec, this being included with the original project when the supervision of the undertaking was transferred to the Department of Marine and Fisheries in 1904.

The River St. Lawrence Ship Channel extends in reality from Father Point to Montreal, a distance of 340 statute miles, but the contracted part of the river, which may be called "ship channel" proper begins at the Traverse, 60 miles below Quebec, giving a length of 220 miles.

The additional section was taken in hand in order to insure a 30-foot channel at extreme low tide at St. Thomas flats and Beaujeu bank. This work was begun in 1906.

The Beaujeu Bank channel was completed to a depth of 30 feet at extreme low tide, and with a width of 1,000 feet, in 1910. While the St. Thomas channel was completed to a similar depth and width and opened to navigation in 1912.

The South Channel being now completed, the Government immediately resolved to improve the North Channel below Quebec, which was strongly recommended by the shipping interests.

As it was found, however, that owing to the increased size of vessels using the ship channel, a depth of 30 feet at extreme low tide was unlikely to meet the future requirements of navigation, it was decided to deepen the North Channel to a depth of 35 feet at extreme low tide, and with a width of 1,000 feet. This work is now in active progress.

At the present time a splendid channel of 30 feet at extreme low water exists from Montreal to Cap à la Roche, and to Quebec by taking advantage of the tide.

The success of the work is in a great measure due to the geographical situation of the route, the physical features of the river being favourable for improvement, the determination and public spirit of the business men and industrial corporations of Montreal, and to the recognition by the Government of Canada of the national character of the project.

#### ACCIDENTS IN 1913.

##### *Between Montreal and Father Point.*

Only one serious accident occurred in the River St. Lawrence Ship Channel during the season of 1913. This was the collision, on July 28, during a dense fog, between steamers *Crown of Cordova* and *Lady of Gaspé*, opposite Cap Madeleine, a short distance below Three Rivers, Quebec. The *Lady of Gaspé* was beached, but no lives were lost. Considerable damage was done to both vessels, necessitating docking of both for repairs.



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The minor accidents were as follows:—

*Between Montreal and Quebec.*

*S.S. Canada*, of the "Canada Line," touched slightly edge of south bank above St. Augustin on May 30. No apparent damage.

*S.S. Barcelona* of the "Canada Line," while anchoring during fog, on August 24, below Long Pointe, Montreal Harbour, grounded her stern, port side on bank; was pulled off easily by tugs. No damage.

*S.S. Mount Temple* of the Canadian Pacific Railway Line, grounded on south bank of channel opposite Longueuil, Montreal harbour, September 24. After lighter-ing part of her cargo, the steamer was pulled off by tugs. Some damage was done to her bottom plates; had to be docked for repairs.

*S.S. Pisa* of the "Canada Line," grounded at Batiscan anchorage on September 25. Came off easily at high tide, no damage.

*Between Quebec and Father Point.*

*SS. Lake Manitoba* of the C.P.R. Line, stranded below St. Laurent, Isle of Orleans, on July 29, but came off easily. Considerable damage done to her bottom plates.

*SS. Whakatane*, of the New Zealand Line, collided with wharf during fog at Indian Cove, Quebec harbour, September 13. Slight damage.

*SS. Tyr*, Norwegian steamer, touched ground slightly at St. Barnaby's island, on October 17. No damage.

None of the above accidents can be attributed to any fault of the ship shannel.

MARINE SIGNAL SERVICE—RIVER ST. LAWRENCE SHIP CHANNEL.

There are thirteen stations established at the following places:—

Name of place.	Locality.	Nautical miles below Montreal.	In operation.
Montreal. ....	Top floor Sauvegarde building, corner Notre Dame and St. Vincent streets.....	00	Day and night.
Longue Pointe. ....	On the extreme point.....	5	"
Verchères.....	In the windmill near the wharf.....	19	"
Sorel ....	On the Government wharf .....	39	"
Three Rivers.....	On the upper end of Bureau wharf ..	71	"
Batiscan.....	At the wharf.....	87	"
St. Jean des Chaillons ...	On the hill at the semaphore.....	93	"
Grondines ..	In old Windmill.....	97	"
Portneuf.....	In the front range lighthouse.....	108	During daylight.
St. Nicholas. ....	At semaphore station on summit of hill.....	127	Day and night.
Bridge.....	On point above Quebec bridge.....	133	During daylight.
Quebec.....	In dome of customs building.....	139	Day and night.
Crane Island.....	On the wharf.....	171	"

These stations are connected by a private telephone system, terminating at Quebec and Montreal, with the exception of Crane island, which communicates with Quebec via the Bell Telephone Company's system.



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Each of these stations, with the exception of Montreal and Quebec, is provided with a mast 60 feet in height with a cross spar 20 feet long about 20 feet from the top of the mast.

When the station is in operation, a "Jack" is hoisted to the mast head during daylight, and a white light at night.

Signals displayed at west end of cross spar indicate river or points above station.

Signals displayed at east end of cross spar indicate river or points below station.

For other communications between vessels and stations or vice versa, the international code of signals is used.

This service was begun on September 1, 1907, and has proved to be very useful, as weather conditions and movements of vessels along the river can be reported from all the stations, and the information furnished to all the shipping agencies.

All of the stations were kept in good repair during the past season, and certain improvements made to some of them.

The Verchères station was made a day and night station.

#### ICEBREAKING.

QUEBEC, May 1, 1914.

V. W. FORNERET, Esq., C.E.,

Superintending Engineer,

River St. Lawrence Ship Channel,

Department Marine and Fisheries,

Sorel, Que.

SIR,—I have the honour to submit the following report on the work of the icebreakers *Lady Grey* and *Montcalm* during the winter of 1913-14.

At the close of the season of navigation of 1913 the *Lady Grey* was in readiness to help the last ships through the ice, and to aid the buoy service, but as there was no ice her services were not required, and on December 4, she proceeded to her station at Quebec to take up the work of guarding Cap Rouge during the winter.

The winter of 1913-14 was of about average severity. The month of December was mild. In January the thermometer registered zero, or below, only on three or four days during the month. Throughout February zero or below, was the rule rather than the exception. During the month of March the temperature was high for the season, and following this came cold weather in April.

The ice bridge formed at Sorel and Port St. Francis on December 28, and a short time afterwards the river was covered with ice from the latter place to Montreal. On January 13 the ice blocked at Batiscan, and by February 1, it had blocked up as far as Port St. Francis.

During the month of December the weather was so mild that there was little ice, and the icebreakers had no work to do at Cap Rouge.

On January 13, the first jam occurred at the bridge, followed by one on January 19, and another on February 8. These were all successfully broken up by the icebreakers. On two occasions large fields of batture ice from Les Ecureuils were intercepted and broken before reaching the bridge. Had these large fields of ice got down to that point a very heavy jam would have been formed, which the icebreakers might not have been able to cut through.

The jam of January 19, was broken up more by good luck than good management. The *Lady Grey* had been on a trip to Murray Bay, and fortunately arrived back just in time to help the *Montcalm* clear the channel. It was all the two ships could do, to cut through this jam, working the full seven hours of the falling tide. Had the *Lady Grey* been delayed a day below, the *Montcalm* alone would have been unable to do the work. It is a well-known fact that these jams pile up very rapidly, so it is



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practically certain that had the *Lady Grey* been a day later in returning from Murray Bay, this jam would have reached such proportions as would have required the work of both vessels for the remainder of the season, to clear it.

On February 12, the ice jammed at Portneuf. Until this date it had been open from Quebec to Batiscan.

This jam at Portneuf was exceedingly heavy, and extended from a little below La Roche à Oiseau to Richelieu island, and was made up in parts of packed ice from 40 to 50 feet thick, and in other parts of frazil ice from 60 to 80 feet thick, and solid to the bottom. In a short time after this jam formed the ice had backed up as far as Three Rivers, with the exception of an open space about 4 miles long extending from Richelieu island to Grondines.

The *Lady Grey* began the work of breaking up the Portneuf jam on February 17, and worked there until February 19, when she was recalled to make a trip to Murray Bay. Owing to delays due to bad weather, she was not able to make this trip until February 28. On that date the *Montcalm* went to Portneuf and took up the work where the *Lady Grey* left off. From February 17 until February 28, no work was done at Portneuf as the *Lady Grey* was waiting to go to Murray Bay at the first opportunity and the *Montcalm* was on "stand-by" to break up battures coming from Les Ecu-reuils, which might jam at the bridge. Work was carried on steadily from February 28, until March 13, part of the time both ships working together. On March 13, the *Montcalm* lost her rudder; and as she had not a spare one, this accident put her out of commission for the remainder of the season.

As the *Montcalm* was not available, the whole of the work fell to the share of the *Lady Grey*, and consequently, with only one ship, progress was slower. On March 17, the *Lady Grey* cut through into the open water at the foot of the Richelieu rapids. She at once proceeded to Grondines where she worked until March 20, when a propeller blade was carried away, and a return had to be made to Quebec for repairs. Owing to the fact that the tides were not high enough, it was some days before the ship could be put on the gridiron to have the necessary repairs made, and it was not until March 27 that she resumed work at Grondines.

After the return of the *Lady Grey* to Grondines on March 27, better progress was made, the ice being lighter and breaking freely. On April 2, the head of the cut was at Pointe Citrouille.

From Pointe Citrouille upwards slow progress was made, as stiff blue ice from 18 to 24 inches was encountered, and it was not until April 19 that the *Lady Grey* reached Three Rivers. From April 17 to 19 she was in shelter at Cap Madeleine wharf, as large masses of ice broke away above and below her, so that it would have been dangerous to have attempted further advance. When this ice moved down on April 19 she was able to get into Three Rivers.

After the *Lady Grey* arrived at Three Rivers, she proceeded to clear the river of ice up to Nicolet Traverse, and then to open up the lower end of lake St. Peter. The lake ice shoved on April 22, and was kept running steadily by the *Lady Grey*. On April 25 the last of the up-river ice passed through Port St. Francis, and the river was once more clear to the sea, bringing to a close one of the most strenuous seasons of icebreaking that has yet been experienced.

The river below Montreal having been cleared of ice, the *Lady Grey*, at the request of the Department of Railways and Canals, proceeded to the foot of the Soulanges canal and cut a channel through the heavy accumulations of frazil ice which annually forms there. The opening of this channel enabled the shipping from the upper lakes to pass through to Montreal without delay.

I have the honour to be, sir,

Your obedient servant,

W. B. McLEAN,

*Resident Engineer.*



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## GENERAL INFORMATION.

During the season, the usual sweeping of the channel was done, and no obstruction of a serious nature was discovered.

A few sandbars were found to have formed in the Champlain channel near Point Citrouille, but these were removed by a dredge before the low-water season.

The Cap à la Roche semaphore at Deschaillons, Que., which indicates the depth of water in the dredged channel at Cap à la Roche was put in operation on April 26, and the St. Nicholas semaphore, showing the depth over the undredged St. Augustin bar, on May 3.

Good progress has been made on the north channel below Quebec, where dredges *Beaujeu* (No. 8) and *Galveston* (No. 9) are both at work. In order to expedite this work, it is very important that additional plant be procured. It is the intention of the Department, however, to have a dredge built on similar lines to the *Corozal*, which is employed on the deepening of the Panama canal, which is one of the largest and most powerful dredges of its kind in the world. It is expected that the contract for its construction will be awarded shortly.

Some advance has been made on Horseback bar channel, which should be completed by the end of next season. This will give a channel with a depth of 30 feet at extreme low water and 450 feet in width, instead of 27½ feet depth at ordinary low water and 300 feet width as at present. The axis of the channel will also be changed, and a new range of lights built to mark the centre line.

Cap Charles channel is nearly completed, as the widening will be finished next season, but there is still a short distance at the lower end to be deepened on the south half of the channel. This should be nearly finished by the end of next season, which when completed will give a width of 450 feet on the straight portion of the channel and 600 feet on the curve, and a depth of 30 feet at extreme low water instead of a width of 300 feet and a depth of 27½ feet at ordinary low water as at present.

The dredging at Cap à la Roche channel and curve is not making as much progress as was hoped, owing to the solid shale rock to be removed being of much harder nature than was expected; in fact in some places, the dredges could not make any impression on it. With the aid of the rock-cutter, however, this is being overcome, as the rock-cutter breaks up the rock and prepares it for the dredges, and it is then more easily removed. The widening is nearly completed, and should be finished by the end of next season; the deepening will take two more seasons. When this is done, there will be a channel with a depth of 30 feet at extreme low water and a width of 450 feet to 550 feet instead of 27½ feet at ordinary low water and 300 to 450 feet wide, as at present. (The extreme low-water datum is 2 feet lower than the ordinary low-water datum.) After the widening is done, it will be tested with the sounding scow, and if it proves clear, the buoys will be shifted over to give the increased width, which may be done next season.

The length of the 30-foot channel actually completed at the close of navigation season of 1913, equals 61.55 statute miles. The total length requiring dredging is 63.35 miles, there remaining 1.80 miles yet to be done.

On the 35-foot project between Montreal and Quebec, dredging has been done at lake St. Peter, Ste. Anne traverse, Varennes curve and Pointe aux Trembles channel. The total length dredged equals 15.57 statute miles, total length to be dredged being 82.24 miles, there remaining to be dredged 66.67 miles. With the additional plant now available, much better progress will be made.

The Repentigny steamboat channel from Ile Ste. Therese to Lavaltrie was completed to 15 feet at extreme low water, with the exception of a few small lumps at the lower end of channel, which can be easily cleaned up in a couple of weeks at the commencement of next season. It will then be buoyed out and opened for light-draught navigation. The necessary lighthouses to mark the centre line of the different courses are finished. This new channel will be of great benefit in relieving the ship channel of tows, etc.



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The work on the Montreal floating dock channel approach is nearly completed; a channel of over 800 feet in width and dredged to 30 feet at extreme low water was available at the end of the season. It is expected that the additional widening and deepening will be completed next season.

The total cost, from 1851 to the end of fiscal year, March 31, 1914, of the ship channel, including plant, shops, surveys, etc., is as follows:—

Dredging .....	\$10,505,495 16
Plant, shops, surveys, etc.....	6,433,651 66
	<hr/>
	\$16,939,146 82

The number of cubic yards dredged amounted to 91,301,742, the material varying from very hard shale rock to soft blue clay.

Year.	AVERAGE DEPTH FOR EACH MONTH IN THE 27½ FOOT CHANNEL. (27½ Feet at ordinary low water.)							From Sorel Gauge during each year May to November.	
	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Highest.	Lowest.
	Ft. In.	Ft. In.	Ft. In.	Ft. In.	Ft. In.	Ft. In.	Ft. In.	Ft. In.	Ft. In.
1890 .....	35 6	35 3	31 9	30 6	30 9	29 9	30 6	37 0	29 0
1891.....	34 6	31 3	29 9	29 9	30 0	28 3	28 3	36 9	27 3
1892.....	31 0	31 9	31 6	30 6	28 9	28 3	28 3	33 6	27 3
1893.....	36 0	34 3	30 9	29 9	29 6	28 6	28 0	37 6	27 6
1894.....	34 6	31 9	31 0	29 2	28 3	28 9	29 0	36 0	27 7
1895.....	33 3	31 3	28 3	28 3	27 6	26 9	26 9	34 6	25 10
1896.....	33 6	30 6	28 9	28 0	27 6	27 9	29 0	37 0	27 4
1897.....	35 6	32 6	30 3	29 3	28 0	27 0	27 6	37 0	26 5
1898.....	31 6	30 9	29 8	28 2	28 2	28 3	28 6	32 1	26 9
1899.....	36 2	31 9	30 3	28 6	27 6	28 0	27 9	37 9	26 9
1900.....	33 6	30 9	30 6	29 6	28 1	28 9	29 2	35 9	27 4
1901.....	34 3	31 10	29 2	28 3	27 7	27 4	27 3	36 3	26 6
1902.....	32 2	32 2	32 2	29 4	28 1	28 1	29 0	34 1	27 6
1903.....	33 0	30 11	30 5	29 5	28 4	29 0	27 11	32 8	26 11
1904.....	36 3	34 5	30 9	29 5	29 5	30 4	29 3	37 4	28 1
1905.....	31 10	30 8	29 7	29 0	28 0	28 5	28 1	33 6	27 1
1906.....	32 4	31 5	29 3	27 11	27 3	27 4	27 6	33 3	26 9
	AVERAGE DEPTH FOR EACH MONTH IN THE 30 FOOT CHANNEL. (30 feet at extreme low water of 1897.								
1907.....	37 1	35 9	34 3	32 10	32 4	32 9	33 7	38 3	31 10
1908.....	41 5	37 10	33 10	32 10	32 0	31 0	30 6	42 4	30 0
1909.....	40 6	37 6	33 10	33 2	32 7	32 4	31 6	42 7	30 11
1910.....	35 7	34 5	32 3	31 7	31 6	31 6	31 7	37 1	30 7
1911.....	36 6	34 6	32 1	31 3	30 9	30 2	30 3	38 1	29 4
1912 ..	37 9	37 6	33 6	32 8	32 6	32 6	34 9	40 11	31 3
1913.....	37 0	34 4	32 8	31 10	31 6	32 1	32 7	38 6	31 1



COST OF THE SHIP CHANNEL TO DATE.

TABLE showing the total cost of the Dredging Plant and the Quantities Dredged to March 31, 1914.

	Cost of Dredging.	Expenditure for Plant, Shops, Surveys, &c.	Quantities Dredged.
	\$ cts.	\$ cts.	\$ cts.
MONTREAL HARBOUR COMMISSIONERS, 1851 TO 1888.			
Dredging Montreal to Cap à la Roche to 27½ feet at O.L.W. and from Cap à la Roche to Quebec to 27½ feet at half tide.....	3,402,494 35	534,809 65	19,865,693
DEPARTMENT OF PUBLIC WORKS.			
Dredging consisting of widening and cleaning up of channel, deepening Cap à la Roche to Cap Charles to 27½ feet at O.L.W. and dredging at Grondines, Lotbinière and Ste. Croix, 1889 to June 30, 1899....	829,583 08	486,971 79	3,558,733
PROJECT OF 1899.			
Dredging channel between Montreal and Quebec to 30 feet at lowest water of 1897, also widening to a minimum width of 450 feet and straightening.			
Fiscal year 1899-1900.....	100,191 01	265,270 78	1,107,894
" 1900-1901.....	136,680 83	287,040 04	2,479,385
" 1901-1902.....	185,429 80	479,731 47	3,098,350
" 1902-1903.....	255,776 55	277,703 50	6,544,605
" 1903-1904.....	276,958 59	308,765 44	4,619,260
DEPARTMENT OF MARINE AND FISHERIES.			
This includes the work below Quebec.			
Fiscal year 1904-1905..	311,087 93	277,225 69	2,716,220
" 1905-1906.....	431,768 30	317,327 37	4,047,530
" 1906-1907 (July 1, '06 to March 31, '07)...	302,677 37	275,003 61	3,001,010
" 1907-1908.....	478,209 66	417,390 22	4,831,875
" 1908-1909.....	497,686 03	340,861 86	5,896,737
" 1909-1910.....	572,950 71	321,375 80	6,354,285
" 1910-1911.....	576,838 02	488,248 88	5,600,050
" 1911-1912.....	588,697 60	499,799 58	4,509,904
" 1912-1913.....	663,229 74	430,107 86	6,929,344
" 1913-1914....	895,235 59	426,018 12	6,140,867
	10,505,495 16	6,433,651 66	91,301,742

DREDGING OPERATIONS NO. 1.

Laval (No. 1).—This is the oldest dredge in the ship channel fleet. The hull is of wood, constructed in Ottawa in 1894. The buckets are made of cast steel, for work on rock or other hard material.

During the winter of 1912-13 the hull, boilers, machinery, and buckets of this dredge were overhauled and repaired. A new steel frame and a new funnel were installed.

The details of the operations for the fiscal year beginning April 1, 1913, were as follows:—

Dredge No. 1 left Sorel on April 28, and arrived in Montreal the next morning, April 29. From April 29, until May 6, she was tied up at Maisonneuve, engaged in putting in a new bow wire, taking coal, etc.



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On May 7, this dredge was laid out at section 42 in the ship channel abreast of Hochelaga, where she worked until June 20. Anchors were lifted on this date, and the dredge was taken to the floating dock of the Canadian Vickers Company, Limited, where she was docked the following day, June 21.

The dredge remained in dock until July 4, undergoing repairs to the hull.

On July 5 she was laid out again where she left off on June 20, and continued working until November 28, when she stopped for the season, and was brought to Sorel on November 29, to go into winter quarters.

The work to be done was clearing up small irregular lumps and patches. This involved covering as much ground as though a fair average cut had been carried, but gave a low return for the number of cubic yards dredged, and consequently a high cost per cubic yard.

From June 21 until July 4, inclusive, this dredge was in dry dock, and from October 6 to 8, inclusive, time was lost, as the buckets had come off the tumbler. Apart from this there was no serious delay or breakage throughout the season.

In a total of 160 days during which dredge *No. 1* was at work, her machinery was in actual operation 71 per cent of the full working time.

The total number of cubic yards dredged amounted to 49,450, at a cost of \$59,884.46 or \$1.21<sup>11</sup>/<sub>100</sub> per cubic yard.

*Laurier (No. 2).*—The hull of this dredge is also of wood, having been constructed at the Government ship yard at Sorel in 1897. She is equipped with a set of cast-steel buckets, especially designed for work in rock or other hard material.

During the winter of 1912-13, this dredge was given a thorough overhauling; a new tumbler and a new funnel were supplied.

The details of the operations of this dredge for the fiscal year beginning April 1, 1913, were as follows:—

Dredge *No. 2* left Sorel April 22, arriving at Varennes the same afternoon. She was laid out for work on April 23 at Varennes curve, to widen and deepen the channel to 35 feet at low water of 1897, the material being soft clay.

*No. 2* continued to work at Varennes curve until June 24, when she was taken down to Cap à la Roche, where the dredge worked until September 2, when it was found necessary to take *No. 2* to Montreal to place her into the floating dry dock, as the vessel was leaking very badly. Dredge *No. 2* came out of dock, after the necessary repairs and caulking had been made, on September 15, and was taken back to Cap à la Roche, and laid out on Cap Charles channel, the material to be removed being hard shale rock.

On October 28, the dredge was towed up to Varennes curve to continue where she had been working at the beginning of the season, and was taken into winter quarters at Sorel on November 26, 1913.

In a total of 172 days during which dredge *No. 2* was at work, her machinery was in actual operation 54 per cent of the full working time.

The total number of cubic yards dredged amounted to 242,881, at a cost of \$64,709.86, or 26 <sup>65</sup>/<sub>100</sub> cents per cubic yard.

*Aberden (No. 3).*—The hull of this dredge is of steel, the complete vessel having been constructed at the Sorel shipyard in 1900. The buckets are of cast steel, for working in hard material.

During the winter 1912-13 this dredge was given a good overhauling and put in first-class condition for the next season.

The details of the operations of this dredge for the fiscal year April 1, 1913, were as follows:—

On April 22, dredge *No. 3* was taken to Ste. Anne traverse, and laid out to deepen and widen the channel to 35 feet at low water of 1897, the material to be dredged being clay. Work was carried on there until June 16.



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On June 16, this dredge was removed to Grondines, where she was laid out at Horseback bar to deepen and widen the channel to 30 feet at low water of 1897, the material to be removed being clay and embedded boulders. She continued working at Grondines until November 7.

Owing to the stony nature of the material to be dredged, *No. 3* lost a good deal of time removing stones and boulders with the aid of a stone lifter. Time was lost from September 2 to 6, inclusive, repairing buckets and putting in new teeth, also from September 13 to 17 inclusive, renewing bush and key of tumbler. On October 3, the buckets came off the frame, and the dredge was unable to work from that date until October 14, when they were all finally lifted and replaced.

On November 7, *No. 3* was taken up river to Pointe aux Trembles, where she was laid out on November 10, to deepen and widen the channel to 35 feet at low water of 1897, the material to be dredged being clay. She remained working there until November 26, when she was brought down to Sorel and went into winter quarters.

The working time of dredge *No. 3* was 186 days, the dredge being in actual operation 64 per cent of the full working time.

The total number of cubic yards removed amounted to 299,766 cubic yards, at a cost of \$58,807.44 or 19  $\frac{6}{100}$  cents per cubic yard.

*Lady Minto (No. 4).*—This dredge is of the same type and design as *No. 3*, and was constructed at the Sorel shipyard in 1900. *No. 4* is also provided with cast steel buckets for dredging in rock and other hard material.

During the winter 1912-13, the dredge received all necessary repairs and overhauling to put her into satisfactory shape for next season's work.

The details of the operations during the season commencing April 1, 1913, were as follows:—

Dredge *No. 4* left Sorel April 23, was taken up to Pointe aux Trembles, and laid out on April 25, to deepen and widen the channel to 35 feet at low water of 1897, the material to be removed being clay. She worked there until June 20.

On this date, *No. 4* was brought down to Varennes, where she was laid out at Varennes curve to deepen and widen the channel to 35 feet. Clay was the material to be excavated. She was operated there until July 19.

On July 19, she was towed to Sorel, where additional anchor chains were taken on board, and on July 21 she left for Grondines, arriving on July 22. The following day, July 23, *No. 4* was laid out there to deepen and widen the channel to 30 feet at low water of 1897. The material to be removed being clay and embedded boulders.

Dredge *No. 4* worked at Grondines from July 23 until November 7. While there she had two accidents which occasioned some little delay. (On October 7 the buckets came off the frame, and the dredge was unable to work from that date until October 11 inclusive, when the buckets had all been replaced. Again on November 1, the buckets came off, and most of them went to the bottom. These buckets had all been lifted with the aid of a stone lifter by November 7, and on this date the dredge was brought to Sorel, where she was again put into working order.)

The dredge was in readiness again by November 11, and on that date was laid out at Ste. Anne traverse to deepen and widen the channel to 35 feet, the material to be dredged being clay. She worked there until November 21, when the buckets again came off the frame. These buckets were lifted by November 26; the dredge was then brought into winter quarters at Sorel.

The number of days during which this dredge was in operation was 183, and the percentage of time of actual work 62.

The total number of cubic yards removed amounted to 304,085, at a cost of \$58,186.52, or 19  $\frac{13}{100}$  cents per cubic yard.



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*Lafontaine* (No. 5).—This dredge was constructed at the Sorel shipyard, and was completed in 1901. Her hull is of wood, she is fitted out with cast steel buckets, and has breasting winches of a new type, using wire rope instead of chains for side moorings.

During the winter of 1912-13, the dredge was thoroughly repaired, boilers, engines, buckets, winches, hull, deck houses, etc., being overhauled and put into first-class condition for the next season.

The details of the operations of this dredge for the fiscal year beginning April 1, 1913, were as follows:—

Dredge No. 5 left Sorel April 22, and was taken up to Varennes and was laid out on April 23, to deepen and widen Varennes curve to 35 feet at low water of 1897, the material being clay. Work was carried on at Varennes until June 7.

On this date, No. 5 was brought to Sorel, remaining there until June 10 undergoing repairs, and on that date was taken to Cap à la Roche curve where she was laid out to deepen and widen the channel to 30 feet at low water of 1897, the material to be removed being shale rock. She continued working there until November 11.

No. 5, on November 11, was brought up from Cap à la Roche to Pointe aux Trembles and laid out on November 12 to deepen and widen the channel to 35 feet. Work was carried on there until November 25, and on November 26 she was taken to Sorel to go into winter quarters.

On September 4, the buckets came off the tumbler, and the dredge was not ready for work again until September 8.

The working time of dredge No. 5 was 183 days, the dredge being in actual operation 51 per cent of the full working time.

The total number of cubic yards removed amounted to 230,322, at a cost of \$74,432.36, or 32  $\frac{3}{4}$  cents per cubic yard.

*Baldwin* (No. 6).—This dredge was constructed at the Sorel shipyard in 1902, the hull being of wood. No. 6 is provided with large built-up buckets for work in soft material, but with sufficient teeth to enable her to work in hard-pan, etc.

During the winter of 1912-13, this dredge was given a complete overhauling both in the engine room and on deck.

The details of the operations of this dredge for the fiscal year beginning April 1, 1913, were as follows:—

Dredge No. 6 left Sorel May 7, and was taken up to St. Sulpice channel, where she was laid out for work on the new steamboat channel to dredge to a depth of 15 feet at low water of 1897, and 300 feet wide, the material being clay, sand, and stones. From May 7 until May 10, no dredging was done, as repairs to the frame hoisting winch were being finished. Work began on Monday, May 12, and continued until June 16, when a tumbler was broken. The dredge was taken to Sorel, the repairs were made to the tumbler, and she was relaid out at St. Sulpice channel on June 23, where she worked until July 28.

On July 28, No. 6 was taken down river and laid out on July 30, in Champlain channel to clean up some lumps and ridges that had been formed. She worked there until November 10.

Some time was lost owing to breakages while No. 6 was at Champlain channel. She was unable to work from August 28 until September 8, as the shaft of one of the breasting winches was broken and the bush for the tumbler had to be renewed. From September 15 to 17, the dredge was again idle, as an air pump required repairs. On September 22, the buckets came off the frame and were not all replaced until September 29.

On November 10, No. 6 left Champlain, and was taken back to the St. Sulpice channel, and laid out on November 12. She worked there until November 27, when she was brought into winter quarters at Sorel.



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In a total of 165 days during which this dredge was at work, her machinery was in actual operation 47 per cent of the full working time.

The total number of cubic yards removed amounted to 206,850 at a cost of \$59,679.39 or 28  $\frac{85}{100}$  cents per cubic yard.

Hydraulic dredge *J. Israel Tarte* (No. 7).—The hull of this dredge is of steel, of the same type and general design as the steel hulls of the elevator dredges. She was constructed in 1902 by the Polson Iron Works Company, of Toronto, Canada.

During the winter of 1912-13, the dredge and the discharge pipes were thoroughly overhauled and repaired.

The details of the operations of this dredge for the fiscal year beginning April 1, 1913, were as follows:—

Dredge No. 7 left Sorel May 6, and was taken down and laid out at the White buoy curve, lake St. Peter, to deepen the channel to 35 feet at low water of 1897, the material being clay. After being placed in position, the discharge pipes had to be connected and some general repairs finished, so that it was not until May 12, that the dredge began work. From May 12 until August 7, she was employed at the White buoy curve.

On the latter date, No. 7 was moved up to the lower end of No. 1 curve, where she was laid out to deepen the channel to 35 feet, the material to be removed being hard clay and stones. She began work at curve No. 1 on August 8, and continued working there until November 14, when the dredge was brought up to Ile à la Pierre, where the crew were engaged cleaning ship until November 25, when she was brought to Sorel to go into winter quarters.

During the season some delays were caused owing to breakages, the most serious of which were as follows: From June 17 to 19, time was lost owing to a broken piston rod; from June 26 to 28, the dredge had to stop work owing to one of the pumps being out of order; on September 17, the cutter head shaft was broken, the dredge was brought to Sorel, repairs made, and she was relaid out for work on October 2.

Dredge No. 7 was greatly delayed again during the season by wind; working as she does pretty well in the centre of the lake, she is exposed from every quarter. The discharge-pipe connections are frequently broken, and a great deal of time lost reconnecting them.

Steam pressure was again a serious cause of delay, stokers being hard to get, and very frequently those employed being very poor firemen, without a proper knowledge of their duties.

In a total of 153 days during which this dredge was at work, her machinery was in actual operation 41 per cent of the full working time.

The total number of cubic yards removed amounted to 1,422,142 at a cost of \$123,916.33 or 8  $\frac{71}{100}$  cents per cubic yard.

Hopper-hydraulic dredge *Beaujeu* (No. 8).—Steel hull, twin screw: This dredge was constructed at the Sorel shipyard, and completed in 1907.

During the winter of 1912-13, No. 8 had the usual overhauling and repairs, and was put into first-class condition for the next season's work.

The details of the operations during the season commencing April 1, 1913, were as follows:—

Dredge No. 8 left Sorel April 24, stopped at Three Rivers to take coal, and arrived at her station at West Sand in the North channel below Quebec on April 25. She began work the same evening, dredging to a depth of 35 feet at extreme low water spring tides, and to a width of 1,000 feet, the material removed being clay, sand, gravel, and stones. She continued working without any serious interruptions until July 2.

On this date, the dredge was compelled to stop owing to a strike among the firemen, and did not recommence until July 14. The time was not altogether lost,



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however, as it would have been necessary to stop in a few days to make repairs to the turbine and cutter-head shafts. This work was carried out by the engineers and oilers, while a new lot of firemen were being obtained.

No. 8 began work again on July 15, but for the remainder of the month lost more or less time owing to not having a full complement of stokers.

From August 1, work was carried on without any interruptions of any great importance until September 17. From September 18 to 20, inclusive, the dredge was idle, as the turbine shaft had to be renewed. Dredging operations were recommenced on September 21, and continued until October 4, when the dredge was put into dry dock for repairs to the tail-end shafts, rudder and some re-riveting of the shell plating. She came out of dock on the morning of October 18, and proceeded to her station at West Sand. She continued working there until November 29, when she left for Sorel, where she arrived December 1, and went into winter quarters.

A hopper barge to serve dredge No. 8 was delivered by the firm of Messrs. Geo. T. Davie and Sons, of Lévis, Que., about the end of October. This barge was in commission for about a month, and after being experimented with and put through various trials was found to work satisfactorily.

At present dredge No. 8 is working only on one anchor making long cuts in the direction of the channel through the heavy bank of sand at West Sand. Before very long, the bulk of the material will have been removed, and it will be necessary to lay out the dredge on breasting anchors to clean up lumps and ridges and make a good bottom. Previously, when the dredge did breasting work, she loaded herself and carried her load to dump, and the best that could be done was one load each tide. Now the dredge will remain on her anchors, the hopper barge will be loaded and sent to the dump, and the only time lost will be while the barge is absent discharging her load. Working in this way, there will be very much less delay.

Another barge similar to the one already received is to be provided, and, when this is done, the dredge will be able to work continuously, as one barge will be alongside loading, while the other is away discharging.

In a total of 165 days during which this dredge was at work, her machinery was in actual operation 81 per cent of the full working time.

The total number of cubic yards removed was 1,638,400 at a cost of \$94,604.35, or 5  $\frac{77}{100}$  cents per cubic yard.

Suction Hopper dredge *Galveston* (No. 9).—Steel hull, twin screw. During the winter of 1912-13, this dredge received the usual repairing and overhauling.

The details of the operations of this dredge for the fiscal year beginning April 1, 1913, were as follows:—

Dredge No. 9 left Sorel April 26, came down to Quebec, and on April 28, went into dry dock, where she remained until May 13.

This dredge was fitted with two sets of dumping doors. The lower set, which were large and opened below the bottom, when dumping, were exposed to the danger of touching the bottom and being broken or carried away. The other set was placed above the large doors. These doors are much smaller than the lower doors, and consequently stronger. When the small doors are open they are flush with the bottom of the ship, so that there is no danger of damaging them should the vessel touch anything.

It was decided, as there had been a great deal of trouble in keeping the large doors tight, to use only the small doors, as they were stronger. This would reduce the quantity of each load a little, but there would be less loss owing to the doors being tight and the load could be made more quickly.

During the time the *Galveston* was in dry dock, the above changes to the dumping doors were made, the tail shafts were overhauled, and the vessel was scraped and painted up to the water line.



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On May 13, *No. 9* left the dry dock, coaled up, and then proceeded to her station at West Sand, on the North channel, arriving there May 14, and beginning work the same day, dredging to 35 feet at extreme low water, spring tides, 1,000 feet in width, the material being sand, gravel, and stones.

This dredge was employed during the whole season in the North channel.

On November 15, *No. 9* left West Sand, went to St. Michel where the ship was grounded and the intake blocked. She left there November 16 and proceeded to Sorel, arriving there November 17, and went into winter quarters.

Dredge *No. 9* was greatly delayed throughout the season by breakages of one kind or another of more or less importance.

The most serious of the accidents to the machinery are as follows:—

During June two days were lost repairing the windlass; from July 11 to 17, the dredge was at St. Michel repairing a sluice valve; the dredge was idle from August 12 to 14 while repairs were made to a pit-valve; the dredge was unable to work September 29 and 30, as the turbine casings had to be renewed; finally, on November 15, the machinery throughout was in such bad condition that she was ordered to prepare for winter quarters. *No. 9* was beached at St. Michel to have the intake opening closed, and left for Sorel on November 16, reaching her destination on the 17th.

The working time of dredge *No. 9* was 161 days. She was in actual operation 69 per cent of the full working time.

The total number of cubic yards removed amounted to 586,100 at a cost of \$84,316.97 or 14  $\frac{38}{100}$  cents per cubic yard.

*Dipper dredge No. 10.*—Steel hull. This dredge was constructed at Sorel shipyard, and completed 1910.

During the winter of 1912-13, all necessary repairs were made to dredge *No. 10*.

The details of the operations of this dredge for the fiscal year beginning April 1, 1913, were as follows:—

Dredge *No. 10* left Sorel April 26, and was taken up to Maisonneuve, arriving there the same day. Several days were lost waiting for the floating crane to place the spuds, and in placing the same, and it was not until May 9, that the dredge was laid out at the approach to the floating dock to dredge to 30 feet at low water of 1897 and from 500 to 750 feet in width, the material being hard-pan and stones. This dredge was employed on the approach to the floating dock for the whole season, and on November 24, was taken into winter quarters at Sorel.

There were a number of minor breakages which, taken altogether, occasioned considerable delay. The most serious accident was the breaking of the counter balance of the crank shaft, which occurred May 19, and the repairs were not completed until May 24.

The working time of dredge *No. 10* was 165 days, the dredge being in actual operation 63 per cent of the full working time.

The total number of cubic yards removed amounted to 409,600 at a cost of \$57,678.47 or 14  $\frac{08}{100}$  cents per cubic yard.

*Dipper dredge No. 11.*—Steel hull. This dredge was constructed at the Sorel shipyard, and was completed in 1911.

During the winter of 1912-13, the hull and machinery of this dredge received a complete overhauling.

Dredge *No. 11* left Sorel April 24, and arrived at Maisonneuve the same day. From April 25 until May 5, the crew was employed putting in the spuds, shipping a bucket and generally getting the dredge into shape. She began work on May 6, at the approach to the floating dock, dredging to 30 feet at low water of 1897, and to a width of from 500 to 750 feet, the material removed being hard-pan and stones. Dredge *No. 11* was employed throughout the season at the approach to the floating dock and was brought into winter quarters at Sorel, November 19, 1913.



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There was a good deal of lost time throughout the season owing to minor breakages and others of a more serious nature. The most important of the latter were as follows: On May 28, the friction of the starboard spud was broken, was taken to Sorel, repaired, and the dredge began again June 4. On August 15, the bucket was damaged, and repairs were not completed until August 18. Again on August 20, the swinging table was damaged, and the repairs were only finished on August 26.

The working time of dredge *No. 11* was 167 days, the dredge being in actual operation 56 per cent of the full working time.

The total number of cubic yards removed amounted to 357,000 at a cost of \$53,-694.45 or 15 <sup>0</sup>/<sub>100</sub> cents per cubic yard.

*Elevator dredge No. 12.*—This dredge was constructed at the Sorel shipyard, and was completed in 1912. Her hull is of steel. *No. 12* is fitted out with large cast steel buckets for rock work, and can dig to the depth of 52 feet. The breasting winches are similar to those in elevator dredge *No. 5*, using wire cables instead of chains.

The details of the operations of this dredge for the fiscal year beginning April 1, 1913, were as follows:—

Dredge *No. 12* left Sorel May 13, and was taken to Pointe aux Trembles, where she was laid out to deepen the channel to 35 feet at low water of 1897 and widen it, the material being shale rock and clay. She worked there until July 10.

On this date the dredge was taken down river to Cap Charles curve where she was laid out to deepen the channel to 30 feet at low water of 1897 and widen the material to be dredged being shale rock and boulders. Owing to repairs that had to be made to the tumbler, the dredge did not begin work at Cap Charles until June 18. She worked there until November 14.

On November 14, *No. 12* was taken up river again and laid out at Pointe aux Trembles, November 17, to continue where she left off in July. She remained dredging there until November 27, when she was brought into winter quarters at Sorel.

Dredge *No. 12* lost a good deal of time “stoning” at Cap Charles curve, and also was delayed considerably owing to breakages. The most serious of these were as follows: The dredge was idle June 23, renewing teeth of buckets; again from July 14 to 17, making repairs to the tumbler; no work was done from August 14 to 16, as repairs had to be made to the side rods of frame; September 24 the large gear wheel was broken, and repairs were only completed September 27, repairs to side rods and bracket of frame were being made from October 13 to 16.

The working time of dredge *No. 12* was 168 days, the dredge being in actual operation 50 per cent of the full working time.

The total number of cubic yards removed amounted to 207,071, at a cost of \$63,-738.60 or 30 <sup>7</sup>/<sub>100</sub> cents per cubic yard.

*Elevator dredge No. 13.*—This dredge was constructed at the Sorel shipyard, and was completed in 1913. Her hull is of steel. *No. 13* is fitted out with large cast-steel buckets for rock work, and can dig to a depth of 52 feet. The breasting winches are similar to those on elevator dredge *No. 5*, using wire cables instead of chains.

The details of the operations of this dredge for the fiscal year beginning April 1, 1913, were as follows:—

Dredge *No. 13*, after being completed, was laid out September 2, at Ste Anne traverse close to Sorel in order to have her near the repair shops, in case, as very frequently happens, that anything should go wrong with her new machinery.

This dredge was employed deepening the channel to 35 feet at low water of 1897 from September 2, until November 28, when she was brought into Sorel for winter quarters. The material dredged was soft clay.



The working time of dredge *No. 13* was 77 days, the dredge being in actual operation 54 per cent of the full working time.

The total number of cubic yards removed amounted to 187,200 at a cost of \$41,586.39 or 22 <sup>21</sup>/<sub>100</sub> cents per cubic yard.

The total number of cubic yards removed by the dredging fleet in the ship channel between Montreal and Quebec, during the fiscal year ending March 31, 1914, amounted to 3,916,367, at a total cost of \$716,314.27 or 18 <sup>29</sup>/<sub>100</sub> cents per cubic yard.

The total number of cubic yards removed by the dredges *Beaujeu* (*No. 8*) and *Galveston* (*No. 9*) in the North channel below Quebec during the fiscal year ending March 31, 1914, amounted to 2,224,500, at a total cost of \$178,921.32 or 8 <sup>03</sup>/<sub>100</sub> cents per cubic yard.

The total number of cubic yards removed by the whole of the dredging fleet during the fiscal year ending March 31, 1914, amounted to 6,140,867, at a total cost of \$895,235.59 or 14 <sup>57</sup>/<sub>100</sub> cents per cubic yard.

PROGRESS of Dredging Operations at Date of Writing, the Close of the Season 1913, 30-foot Project.

Locality.	Distance, English miles.	Total length requiring dredging.	Length dredged in 1913.	Total length of 30-foot channel dredged.	Length yet to be dredged.
		Miles.	Miles.	Miles.	Miles.
Division 1:— Montreal to Sorel .....	45	22·90	.....	22·90	All completed.
Division 2:— Sorel to Batiscan.....	36	12·45	.....	12·45	All completed.
Division 3:— Lake St. Peter... ..	20	18·00	.....	* 0·20 †17·80	
Division 4:— Batiscan to Quebec.....	59	10·00	0·40	8·20	1·80
Division 5:— Quebec to the Traverse.....	60	6·65	.....	4·65	2·00
Total.....	220	70·00	0·40	66·20	3·80

\*Not widened. †Widened.



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PROGRESS of the Dredging Operations at the Date of Writing, the Close of the Season of 1913, 30-foot Project.

Locality.	Length of Dredging.		Cubic Yards, yet required to be done.
	Required.	Done.	
	Miles.	Miles.	
Division 1—			
Longueuil shoal .....		1·10	
Longue Pointe to Pointe aux Trembles ( E.H.) .....		5·05	
Ile Ste. Thérèse. ....		0·40	
Varennés to Cap St Michel.....		3·00	
Cap St. Michel to Verchères. ....		4·50	
Verchères traverse.....		1·10	
Verchères to Contrecoeur. ....		1·70	
Contrecoeur channel.....		6·05	
Total. ....		22·90	
Division 2—			
Sorel to Ile de Grace .....		4·40	
Stone Island.....		1·10	
Ile aux Raisins.....		0·25	
Lake St. Peter (see Division 3).....			
Port St. Francis. ....		0·50	
Three Rivers.....		0·50	
Cap Madeleine to Becancour.....		1·55	
Becancour to Champlain.....		2·25	
Champlain to Pointe Citrouille.....		1·30	
Batture Perron .....		0·60	
Total.....		12·45	
Division 3—			
Lake St. Peter .....		{ * 0·20 †17·80 }	200,000
Total. ....		18·00	200,000
Division 4—			
Batiscan to Cap Levrard. . ....		3·00	
Cap à la Roche channel .. ...	0·20	1·80	200,000
Pouillier Rayer.....		1·20	
Cap Charles.....	0·10	0·80	160,000
Grondines.....	0·30	0·50	140,000
Lotbinière.. ....		0·40	
Cap Santé.....		0·20	
Ste. Croix. ....	0·60	0·30	300,000
St. Augustin.....	0·60		500,000
Total.....	1·80	8·20	1,600,000
Division 5—			
Quebec to The Traverse... ..	2·00	66·20	2,350,000
Total .....	2·00	4·65	550,000
Totals .....	3·80	4·65	550,000
Cubic yards yet to be done.....			2,350,000
Cubic yards done.....			73,537,662
Total. ....			75,887,662

\*Not widened.    †Widened.



PROGRESS of Dredging Operations at Date of Writing, the Close of the Season 1913,  
35-foot Project.

Locality.	Distance, English miles.	Total length requiring dredging.	Length dredged in 1913.	Total length of 35-foot channel dredged.	Length yet to be dredged.
		Miles.	Miles.	Miles.	Miles.
Division 1— Montreal to Sorel.....	45	28·63	0·63	1·77	26·86
Division 2— Sorel to Batiscan. ....	36	19·75	0·64	1·24	18·51
Division 3— Lake St. Peter .....	20	18·32	2·38	12·56	5·76
Division 4— Batiscan to Quebec .....	59	15·54	.....	.....	15·54
Division 5— Quebec to Goose Cape (North channel)	66	8·14	0·25	0·75	7·39
Total.. ..	226	90·38	3 90	16·32	74·06



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PROGRESS of the Dredging Operations at the Date of Writing, the Close of the Season  
1913, 35-foot Project.

Locality.	Length of Dredging in Miles.		Cubic Yards yet to be dredged.	Cubic Yards dredged.
	Yet to be done.	Done.		
Division 1—				
Longueuil shoal .....	1·88	.....	573,259	
Longue Pte. traverse .....	0·47	.....	426,222	
Longue Pte. curve .....	1·32	.....	657,546	
Pte. aux Trembles channel .....	3·39	0·55	2,071,007	332,425
Ile Ste. Thérèse channel .....	1·12	.....	275,100	
Varennés curve .....	1·36	1·22	612,352	1,764,225
Cap St. Michel curve .....	0·56	.....	385,000	
Cap St. Michel to Verchères .....	4·72	.....	2,273,832	
Verchères traverse .....	1·24	.....	452,241	
Verchères to Contrecoeur .....	1·91	.....	857,837	
Contrecoeur channel .....	8·28	.....	5,221,481	
Lanoraie to Sorel .....	0·61	.....	119,463	
Totals Division 1 .....	26·86	1·77	13,927,343	2,096,650
Division 2—				
Sorel to Ile de Grace .....	3·74	1·24	2,102,510	818,200
Stone island .....	2·11	.....	941,015	
Ile aux Raisins .....	2·09	.....	910,000	
Port St. Francis .....	1·00	.....	632,981	
Three Rivers .....	0·72	.....	410,147	
Cap Madeleine to Becancour .....	2·40	.....	979,118	
Becancour to Champlain .....	1·16	.....	717,500	
Champlain to Pte. Citrouille .....	4·06	.....	1,706,759	
Batture Perron .....	1·23	.....	456,000	
Totals Division 2 .....	18·51	1·24	8,856,030	818,200
Division 3—				
Lake St. Peter .....	5·76	12·56	3,287,806	7,478,248
Division 4—				
Batiscan to Cap Levrard .....	4·48	.....	2,386,168	
Cap Levrard channel .....	1·27	.....	781,666	
Cap à la Roche curve .....	2·06	.....	1,836,859	
Cap Charles channel .....	2·04	.....	1,077,416	
Grondines .....	0·83	.....	513,332	
Lotbinière .....	0·47	.....	321,480	
Cap Santé .....	1·51	.....	655,561	
Ste. Croix .....	1·47	.....	798,518	
St. Augustin .....	1·41	.....	826,207	
Totals Division 4 .....	15·54	.....	9,197,207	
Division 5—				
Quebec to Goose cape (North channel) .....	.....	.....	.....	.....
Madame Reef shoal .....	2·84	.....	2,585,132	
West Sand and East Narrows shoals .....	4·55	0·75	8,448,341	5,119,700
Totals Division 5 .....	7·39	0·75	11,033,473	5,119,700
Totals .....	74·06	16·32	46,301,859	15,512,798



ABSTRACT of Work of Dredging Fleet During the Fiscal Year ended March 31, 1914.

Dredge.	Locality of Dredging.	Time of Service.	Nominal work hours, 24 per day.	Hours actual dredging.	Number of scows filled.	Number of cubic yards dredged (scow measurement.)	Depth of dredging at low water.	Width in feet.	Character of Soil.	Remarks.
		Days.	Hours.				Ft. In.	Feet.		
<i>Laval</i> (No. 1) .....	Montreal harbour (Ship Channel) .....	160	3,504	2,488 <sup>3</sup> / <sub>4</sub>	211	49,450	30 0	600	Stones and gravel...	Captain J. Robidoux.
<i>Laurier</i> (No. 2) .....	Varennnes curve.....	80	1,764	1,018	710	137,625	35 0	550 to 600	Shaleroak, hard pan and boulders.....	Captain R. Matte...
	Cap à la Roche .....	56	1,224	644 <sup>1</sup> / <sub>4</sub>	284	56,877	30 0	450 to 550	Shale rock.	
	Cap Charles channel ..	36	792	361	252	48,379	30 0	450		
		172	3,780	2,023 <sup>1</sup> / <sub>4</sub>	1,246	242,881				
<i>Lady Aberdeen</i> (No. 3) ..	Ste. Anne Traverse ...	47	1,032	810 <sup>3</sup> / <sub>4</sub>	1,102	185,250	35 0	450	Clay.....	Captain Noé Baron.
	Grondines.....	123	2,712	1,612	493	77,916	30 0	450	Clay and embedded boulders.	
	Pte. aux Trembles channel.....	16	348	204 <sup>3</sup> / <sub>4</sub>	183	36,600	35 0	450	Clay.	
		186	4,092	2,627 <sup>1</sup> / <sub>2</sub>	1,778	299,766				
<i>Lady Minto</i> (No. 4) .....	Pte. aux Trembles channel.....	49	1,080	740 <sup>1</sup> / <sub>2</sub>	420	84,925	35 0	450	Clay .....	Captain Joseph Goudreault.
	Varennnes curve.....	26	564	466 <sup>1</sup> / <sub>2</sub>	357	78,200	35 0	550 to 600	"	
	Grondines .....	94	2,076	1,162 <sup>3</sup> / <sub>4</sub>	693	125,860	30 0	450	Clay and embedded boulders.	
	Ste. Anne Traverse ...	14	312	143 <sup>3</sup> / <sub>4</sub>	72	15,100	35 0	450	Clay.	
		183	4,032	2,513 <sup>1</sup> / <sub>2</sub>	1,542	304,085				



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<i>Lafontaine</i> (No. 5) . . . . .	Varenes curve . . . . . Cap à la Roche curve . . Pte. aux Trembles channel . . . . .	39 131 13 183	864 2,880 288 4,032	531 1,387½ 149 2,067½	379 763 50 1,192	76,800 146,022 7,500 230,322	35 30 35 0	0 0 0 0	550 to 600 450 to 550 450 0	Clay . . . . . Shale rock. Clay.	Capt. Jos. St. Pierre.
<i>Baldwin</i> (No. 6) . . . . .	St. Sulpice channel . . . Champlain channel . . .	76 89 165	1,680 1,956 3,636	996¾ 713½ 1,710¼	434 449 883	117,050 89,800 206,850	15 30 0	0 0 0	300 450 0	Clay, sand and stones. Sand (cleaning up).	Captain Ant. Morin
<i>J. Israel Tarte</i> (No. 7) . . .	Lake St. Peter (White Buoy curve) . . . . . Lake St. Peter (Curve No. 1) . . . . .	77 76 153	1,740 1,668 3,408	704½ 672½ 1,377	..... ..... .....	944,651 477,491 1,422,142	35 35 0	0 0 0	450 to 800 450 to 650 0	Clay . . . . . Clay and stones.	Capt. Chas. Lavallé
<i>Beaujeu</i> (No. 8) . . . . .	North channel, West sand (Below Quebec).	165	3,535	2,868	1,014	1,638,400	35	0	1,000	Sand, gravel and stones.	Captain A. Bourget.
<i>Galveston</i> (No. 9) . . . . .	North channel, West sand (Below Quebec).	161	3,492	2,410	498	586,100	35	0	1,000	Sand, gravel and stones.	Captain A. Hoffman.
<i>Dipper Dredge</i> (No. 10) . .	Floating dock approach (Montreal harbour) . .	165	2,850	1,794	1,643	409,600	30	0	500 to 750	Hard pan and stones . .	Capt. Calm Beaulac.
<i>Dipper Dredge</i> (No. 11) . .	Floating dock approach (Montreal harbour) . .	167	2,820	1,567	1,274	357,000	30	0	500 to 750	Hard pan and stones . .	Capt. Willie Lebeau.
<i>Elevator Dredge</i> (No. 12) .	Pte. aux Trembles channel . . . . . Cap Charles curve . . . .	59 109 168	1,296 2,400 3,696	753½ 1,091 1,844½	318 470 788	92,000 115,071 207,071	35 30 0	0 0 0	450 450 to 600 0	Shale rock and clay . . . Shale rock and boulders.	Capt. Alexis Morin.
<i>Elevator Dredge</i> (No. 13) .	Ste. Anne Traverse . .	77 ..... .....	1,686 ..... .....	904 ..... .....	936 ..... .....	187,200 6,140,867	35 0 0	0 0 0	450 0 0	Clay . . . . .	Captain Paul Cardin.



CLASSIFICATION of Disbursements for the

Vessels.	Fuel.	Wages.	Board.	Stores and Materials.	Repairs and Labour.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Dredge <i>Laval</i> (No. 1).....	6,697 89	8,888 78	2,917 19	2,849 96	13,653 35
Tug <i>Varennés</i> .....	4,383 94	5,228 87	2,108 84	1,218 71	2,171 89
Dredge <i>Laurier</i> (No. 2).....	7,397 56	8,955 16	2,934 42	2,513 34	17,711 00
Tug <i>Chambly</i> .....	2,533 28	4,610 24	1,753 15	619 80	5,607 37
Dredge <i>Lady Aberdeen</i> (No. 3).....	7,289 55	9,007 16	2,924 94	1,969 30	14,392 55
Tug <i>Emilia</i> .....	2,724 53	4,069 93	1,530 69	1,721 81	3,481 02
Dredge <i>Lady Minto</i> (No. 4).....	6,817 05	9,448 92	2,934 95	2,736 69	10,624 94
Tug <i>Iberville</i> .....	3,822 53	4,833 28	1,826 38	963 78	4,521 85
Dredge <i>Lafontaine</i> (No. 5).....	11,038 05	9,781 37	3,103 60	5,214 78	18,449 24
Tug <i>Lac St. Pierre</i> .....	5,246 78	4,967 72	1,966 46	2,029 98	1,936 22
Dredge <i>Baldwin</i> (No. 6).....	6,641 55	8,953 74	2,856 96	2,569 18	18,508 51
Tug <i>Lanoraie</i> .....	2,337 52	4,086 02	1,576 54	978 02	1,419 45
Dredge <i>J. Israel Tarte</i> (No. 7). ..	28,384 76	16,535 98	5,045 96	5,397 18	35,368 87
Tug <i>Lotbinière</i> .....	3,621 63	5,423 37	2,025 89	891 73	2,233 50
" <i>Carmelia</i> .....	2,151 68	2,348 91	826 99	702 85	2,431 83
Dredge <i>Beaufeu</i> (No. 8).....	22,019 48	15,814 77	4,729 59	3,699 37	30,696 80
" <i>Galveston</i> (No. 9).....	17,127 98	13,733 22	3,843 87	4,474 32	28,153 08
Tug <i>Jas. Hawden</i> { Divided equally between Nos. 8 and 9. }	3,772 76	5,247 58	1,890 41	1,552 57	5,535 12
Dipper dredge (No. 10) .....	8,241 39	9,304 78	2,568 94	2,725 67	13,032 42
Tug <i>Contrecoeur</i> .....	4,417 70	5,314 14	1,988 23	1,278 42	2,530 10
Dipper dredge (No. 11) .....	9,033 39	8,714 16	2,318 01	2,851 60	11,821 91
Tug <i>Portneuf</i> .....	2,799 94	4,363 02	1,645 87	1,335 97	2,789 44
Elevator dredge (No. 12).....	10,412 55	9,761 35	3,325 68	4,111 37	12,298 48
Tug <i>Laviolette</i> .....	4,292 77	4,819 51	1,829 15	1,393 46	1,482 02
Elevator dredge (No. 13).....	5,998 05	4,682 64	1,463 57	1,182 99	6,786 15
Tug <i>Lavaltrie</i> .....	3,955 27	3,829 96	1,437 01	1,965 92	1,693 41
Str. <i>De Lévis</i> ... { Divided equally $\frac{1}{3}$ }	3,741 75	6,071 72	2,380 58	1,842 01	6,868 08
Tug <i>Jessie Hume</i> { to each Dredge. }	2,490 75	2,297 36	674 03	852 13	6,284 63
Stone-lifter No. 3.. { Divided equally }	130 50	1,550 11	430 17	144 15	2,643 19
Stone-lifter No. 4.. { between Elev. }	387 00	2,415 85	603 16	842 18	2,205 12
Rock-cutter No. 1.. { Dredges. }	2,830 50	4,526 71	1,516 79	1,890 16	2,177 15
Floating shop.....		1,002 23	460 78	380 42	638 89
Construction for dredging fleet—					
Construction No. 36, Completion .....					
" " 39, " .....					
" " 43, " .....					
" " 59, " .....					
Improvements to Sorel ship-yard—					
Boiler hop, new tools & machinery...					
Machine " " " .....					
New sheer legs, completion. ....					
Building No. 20, extention.....					
" 22, Platform for castings...					
" 28, Oil shed.....					
Water Works.....					
Wharf No. 4, extention.....					
Gasoline launch for the yard.....					
Steam Box.....					
One Compressor and cost of installa- tion.....					
Angle sheer and bending machine....					
Ship-yard general.....					
Water Levels Investigation <i>re</i> River St. Lawrence Ship Channel.....					
Stores and materials.....					
Totals.....	202,740 08	210,588 56	69,438 80	64,899 82	290,147 58



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Fiscal Year, ending March 31, 1914.

Expendi- ture: New Plant, Re-building Shipyard, etc.	Proportion of Gen- eral and Office Ex- penses, etc.	Expenditure for each Vessel.	Floating Shop, Rock- crusher and Stone Lifter Ser- vice, Eleva- tor Dredges.	Tug Service.	Inspection Towing, Sweeping, etc.	Total Cost of Operations of each Dredge and Plant during Fiscal Year.	Total Expenditure on Different Appropri- ations.
\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
.....	2,399 26	37,406 43	3,576 26	16,147 99	2,753 78	59,884 46	
.....	1,035 74	16,147 99	.....	.....	.....	.....	
.....	2,707 97	42,219 45	3,576 26	16,160 37	2,753 78	64,709 86	
.....	1,036 53	16,160 37	.....	.....	.....	.....	
.....	2,438 76	38,022 26	3,576 26	14,455 14	2,753 78	58,807 44	
.....	927 16	14,455 14	.....	.....	.....	.....	
.....	2,231 72	34,794 27	3,576 27	17,062 20	2,753 78	58,186 52	
.....	1,094 38	17,062 20	.....	.....	.....	.....	
.....	3,261 44	50,848 48	3,576 27	17,253 83	2,753 78	74,432 36	
.....	1,106 67	17,253 83	.....	.....	.....	.....	
.....	2,709 24	42,239 18	3,576 27	11,110 16	2,753 78	59,679 39	
.....	712 61	11,110 16	.....	.....	.....	.....	
.....	6,218 49	96,951 24	.....	24,211 30	2,753 79	123,916 33	
.....	972 95	15,169 07	.....	.....	.....	.....	
.....	579 97	9,042 23	.....	.....	.....	.....	
.....	5,274 55	82,234 56	.....	9,616 00	2,753 79	94,604 35	
.....	4,614 72	71,947 19	.....	9,615 99	2,753 79	84,316 97	
.....	1,233 55	19,231 99	.....	.....	.....	.....	
.....	2,458 62	38,331 82	.....	16,592 86	2,753 79	57,678 47	
.....	1,064 27	16,592 86	.....	.....	.....	.....	
.....	2,380 89	37,119 96	.....	13,820 70	2,753 79	53,694 45	
.....	886 46	13,820 70	.....	.....	.....	.....	
.....	2,735 24	42,644 67	3,576 27	14,763 87	2,753 79	63,738 60	
.....	946 96	14,763 87	.....	.....	.....	.....	
.....	1,378 50	21,491 90	3,576 27	13,764 43	2,753 79	41,586 39	895,235 59
.....	882 86	13,764 43	.....	.....	.....	.....	
.....	1,432 69	22,336 83	.....	.....	.....	.....	
.....	863 48	13,462 38	.....	.....	.....	.....	
.....	335 70	5,233 82	.....	.....	.....	.....	
.....	442 29	6,895 60	.....	.....	.....	.....	
.....	886 95	13,828 26	.....	.....	.....	.....	
.....	170 13	2,652 45	.....	.....	.....	.....	
3,101 37	.....	.....	.....	.....	.....	.....	
1,032 00	.....	.....	.....	.....	.....	.....	
1,512 20	.....	.....	.....	.....	.....	.....	
20 83	.....	.....	.....	.....	.....	.....	5,666 40
3,213 19	.....	.....	.....	.....	.....	.....	
75 21	.....	.....	.....	.....	.....	.....	
10,970 83	.....	.....	.....	.....	.....	.....	
6,710 45	.....	.....	.....	.....	.....	.....	
359 74	.....	.....	.....	.....	.....	.....	
4,667 96	.....	.....	.....	.....	.....	.....	
445 83	.....	.....	.....	.....	.....	.....	
7,160 14	.....	.....	.....	.....	.....	.....	
4,473 81	.....	.....	.....	.....	.....	.....	
119 89	.....	.....	.....	.....	.....	.....	
6,862 64	.....	.....	.....	.....	.....	.....	
5,270 66	.....	.....	.....	.....	.....	.....	
265 60	.....	.....	.....	.....	.....	.....	50,595 95
.....	.....	.....	.....	.....	.....	.....	16,956 44
.....	.....	.....	.....	.....	.....	.....	5,465 26
56,262 35	57,420 75	895,235 59	28,610 13	194,574 84	35,799 21	895,235 59	973,919 64



DETAILS of Dredging, Locality and Cost per Cubic Yard.

Dredges.	Total cost of operations and plant during Fiscal Year.	No. of days in operation each dredge.	Cost per day, operations and plant.	Days working, each locality.	Cost of work, each locality.	Total cost of operation of each dredge.	Number of cubic yards dredged in each locality.	Total cubic yards for each dredge.	Cost per cubic yard, each locality.	Average cost per cubic yard for each dredge.	Kind of material dredged.	Locality of dredging.
	\$ cts.		\$ cts.		\$ cts.	\$ cts.			Cts.	Cts.		
<i>Laval</i> (No. 1).....	59,884 46	160	374 28	160	59,884 46	59,884 46	49,450	49,450	121 11	121 11	Stones and gravel. ....	Montreal harbour (Ship chan.)
<i>Laurier</i> (No. 2).....	64,709 86	172	376 22	80	30,097 61	..	137,625	..	21 87	..	Clay. ....	Varennes curve.
				56	21,068 33	..	56,877	..	37 04	..	Shale rock, hard pan and boulders.....	Cap à la Roche curve.
				36	13,543 92	..	48,379	..	27 98	..	Shale rock.....	Cap Charles channel.
<i>Lady Aberdeen</i> (No. 3).	58,807 44	186	316 17	47	14,859 94	64,709 86	185,250	242,881	8 02	26 63	Clay.....	Ste. Anne traverse.
				123	38,888 79	..	77,916	..	49 91	..	Clay and embedded boulders.....	Grondines.
				16	5,058 71	..	36,600	..	13 82	..	Clay .....	Pte. aux Trembles channel.
<i>Lady Minto</i> (No. 4)....	58,186 52	183	317 96	49	15,580 00	58,807 44	84,925	299,766	18 34	19 62	Clay .....	Pte. aux Trembles channel.
				26	8,266 93	..	78,200	..	10 57	..	Clay .....	Varennes curve.
				94	29,888 16	..	125,860	..	23 75	..	Clay and embedded boulders.....	Grondines.
				14	4,451 43	..	15,100	..	29 48	..	Clay .....	Ste. Anne traverse.
<i>Lafontaine</i> (No. 5).....	74,432 36	183	406 73	39	15,862 64	58,186 52	76,800	304,085	20 67	19 13	Clay .....	Varennes curve.
				131	53,282 18	..	146,022	..	36 49	..	Shale rock.....	Cap à la Roche curve.
				13	5,287 54	..	7,500	..	70 50	..	Clay .....	Pte. aux Trembles channel.
<i>Baldwin</i> (No. 6). ....	59,679 39	165	361 69	76	27,488 69	74,432 36	117,050	230,322	23 48	32 32	Clay, sand and stones...	St. Sulpice channel.
				89	32,190 70	..	89,800	..	35 85	..	Sand (cleaning up) ...	Champlain channel.
<i>J. Israel Tarte</i> (No. 7).	123,916 33	153	809 91	77	62,363 12	59,679 39	944,651	206,850	6 60	28 85	Clay .....	Lake St. Peter (W. B. Curve.)
				76	61,553 21	..	477,491	..	12 89	..	Clay and stones.....	Lake St. Peter (Curve No.1)
<i>Beaujeu</i> (No. 8).....	94,604 35	165	573 36	165	94,604 35	123,916 33	1,638,400	1,422,142	5 77	8 71	Sand, gravel and stones..	North Channel West Sand (Below Quebec.)
<i>Galveston</i> (No. 9).....	84,316 97	161	523 71	161	84,316 97	94,604 35	586,100	1,638,400	14 38	5 77	Sand, gravel and stones..	North Channel West Sand (Below Quebec.)
						84,316 97	586,100	586,100	14 38	14 38		



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<i>Dipper Dredge</i> (No. 10)	57,678 47	165	349 57	165	57,678 47	57,678 47	409,600	.....	14 08	.....	Hard pan and stones.....	Floating dock approach (Montreal harbour.)
<i>Dipper Dredge</i> (No. 11)	53,694 45	167	321 52	167	53,694 45	53,694 45	357,000	.....	15 04	.....	Hard pan and stones.....	Floating dock approach (Montreal harbour.)
<i>Elevator Dredge</i> (No. 12)	63,738 60	168	379 40	59 109	22,384 38 41,354 22	.....	92,000 115,071	.....	24 33 35 93	.....	Shale rock and clay..... Shale rock and boulders.	Pte. aux Trembles channel. Cap Charles curve.
<i>Elevator Dredge</i> (No. 13)	41,586 39	77	540 08	77	41,586 39	63,738 60	187,200	.....	22 21	30 77	Clay .....	Ste. Anne traverse.
	895,235 59	2,105		2,105	895,235 59	895,235 59	6,140,867	6,140,867		22 21		



## DREDGING FLEET.

The following is a description of the dredging plant, at the end of the season of 1913, owned and operated by the Department of Marine and Fisheries in connection with the River St. Lawrence ship channel between Montreal and Father Point:—

*Dredges.*

*The elevator dredge "Laval" (No. 1).*—Wooden hull; length over all, 150 feet; breadth of beam, 30 feet; depth of hold, 14 feet; average draught, 11 feet; greatest working depth, 42 feet; hull built in Ottawa, in 1894; steel buckets; working capacity per day in hard material, 1,000 to 2,000 cubic yards.

*The elevator dredge "Laurier" (No. 2).*—Wooden hull; length over all, 163 feet; breadth of beam, 32 feet; depth of hold, 14 feet; average draught, 10 feet; greatest working depth, 45 feet; built at Sorel shipyard in 1897; steel buckets; working capacity per day in hard material, 1,000 to 2,000 cubic yards.

*The elevator dredge "Lady Aberdeen" (No. 3).*—Steel hull; length over all, 148 feet; breadth of beam, 32 feet; depth of hold, 13 feet; average draught, 8.5 feet; greatest working depth, 42.5 feet; built at Sorel shipyard in 1900; steel buckets; greatest working capacity per day in hard material 1,000 to 2,000 cubic yards.

*Elevator dredge "Lady Minto" (No. 4).*—Steel hull; length over all, 148 feet; breadth of beam, 32 feet; depth of hold, 13 feet; average draught, 8.5 feet; greatest working depth, 42.5 feet; built at Sorel shipyard in 1900; steel buckets; working capacity per day in hard material, 1,000 to 2,000 cubic yards.

*The elevator dredge "Lafontaine" (No. 5).*—Wooden hull; length over all, 168 feet; breadth of beam, 32 feet; depth of hold, 14 feet; average draught, 9 feet; greatest working depth, 45 feet; built at Sorel shipyard in 1901; steel buckets; working capacity per day in hard material, 1,000 to 2,000 cubic yards.

*The elevator dredge "Baldwin" (No. 6).*—Wooden hull; length over all, 165 feet; breadth of beam, 34 feet; depth of hold, 14 feet; average draught, 8 feet; greatest working depth, 42 feet; built at Sorel shipyard in 1902; 1 cubic yard buckets strengthened for fairly hard material; working capacity per day in medium material 2,500 to 3,500 cubic yards.

*The hydraulic dredge "J. Israel Tarte" (No. 7).*—Steel hull; length over all, 160 feet; breadth of beam, 42 feet; depth of hold, 12.5 feet; average draught, 6 feet; length of suction pipe, 80 feet; greatest working depth, 47 feet; built at Polson Iron Works, Toronto, 1902; working capacity per day in soft material, 12,000 to 20,000 cubic yards.

*Discharge pipe and pontoons of dredge "J. Israel Tarte" (No. 7).*—Twenty-seven lengths of pipe, 36 inches diameter by 100 feet long; one length of pipe 36 inches diameter by 35 feet long; twenty-seven pairs of pontoons for floating pipes, 42 inches diameter by 90 feet long.

*Scow No. 24, pontoon anchor scow for dredge (No. 7).*—Wooden hull; length over all, 63 feet; breadth of beam, 27 feet; depth of hold, 8 feet; built at Sorel shipyard in 1909.

*Scow No. 27, for dredge "J. Israel Tarte" (No. 7).*—Wooden hull; length over all, 60 feet; breadth of beam, 18 feet; depth of hold, 6 feet; built at Sorel shipyard in 1902.



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*The sea-going suction hopper dredge "Beaujeu" (No. 8).*—Steel hull; twin screw; length between perpendiculars, 264 feet; breadth of beam, 45 feet; depth of hold, 20 feet; capacity of hoppers, 2,000 cubic yards in 45 minutes; greatest working depth, 65 feet; draught when loaded, 15 feet; ordinary speed, 9 statute miles; built in Sorel shipyard in 1907.

*The suction hopper dredge "Galveston" (No. 9).*—Steel hull, twin screw; length over all, 233 feet; breadth of beam, 39 feet; depth of hold, 15.5 feet; draught when loaded with 1,800 tons, 14 feet 9 inches aft, and 13 feet 1 inch forward; greatest working depth, 55 feet; built in Germany, 1904; two suction pumps, Dutch type, 8.5 feet outside diameter, working capacity, 1,350 cubic yards in 45 minutes; hopper capacity, 1,500 cubic yards.

*The dipper dredge "No. 10."*—Steel hull; length moulded, 132.5 feet; breadth moulded, 42 feet; depth at bow, 11.5 feet; depth at stern, 9.7 feet; length of spuds, 74 feet; bucket capacity, one 11-yard for soft material, one 9-yard for hard material; capable of dredging to 50 feet; built at Sorel shipyard in 1910.

*The dipper dredge "No. 11."*—Steel hull; length over all, 132.5 feet; breadth moulded, 42 feet; depth at bow, 11.8 feet; depth at stern, 13.5 feet; length of spuds, 74 feet; bucket capacity, one 11-yard for soft material, one 9-yard for hard material; capable of dredging to 50 feet; built at Sorel shipyard in 1911.

*The Elevator dredge "No. 12."*—Steel hull; length over all, 180 feet; breadth of beam, 40 feet; depth of hold, 12.8 feet; average draught, 9 feet; greatest working depth, 52 feet; built at Sorel shipyard in 1912; steel buckets; working capacity per day in hard material, 2,000 to 4,000 cubic yards.

*The Elevator dredge "No. 13."*—Steel hull; length over all, 180 feet; breadth of beam, 40 feet; depth of hold, 12.8 feet; average draught, 9 feet; greatest working depth, 52 feet; built at Sorel shipyard in 1913; steel buckets; working capacity per day in hard material, 2,000 to 4,000 cubic yards.

*Tugs.*

*The ice-breaking and emergency tug "Lady Grey."*—Steel hull; twin screw; length between perpendiculars, 172 feet; length over all, 183 feet 6 inches; breadth moulded, 32 feet; breadth extreme, 32 feet 3 inches; depth moulded, 18 feet; draught mean to bottom of flat plate keel (normal), 12 feet; draught when icebreaking, about 13 feet; displacement in tons at 12 feet draught, 1,070; mean speed, at 12 feet draught, on six runs over measured mile base, 14 knots; built by Vickers, Sons & Maxim, Ltd., Barrow-in-Furness, England, 1906.

*The tug "Bellechasse."*—Steel hull; twin screw; length between perpendiculars, 130 feet; breadth moulded, 27 feet; draught aft, 10 feet 3 inches; draught forward, 8 feet 9 inches; indicated horse-power, 1,000; built by the Kingston Shipbuilding Company, Kingston, Ont., in 1913.

*The tug "Frontenac."*—Composite hull; twin screw; length over all, 113 feet; breadth of beam, 23 feet; depth of hold, 10 feet; average draught, 9 feet; built at Sorel shipyard in 1902.

*The tug "De Levis."*—Wooden hull; twin screw; length over all, 104 feet; breadth of beam, 20 feet; depth of hold, 10 feet; average draught, 8 feet; built at Sorel shipyard in 1902.

*The tug "James Howden."*—Wooden hull; twin screw; length over all, 100 feet; breadth of beam, 21 feet; depth of hold, 10 feet; average draught, 7.5 feet; built at Sorel shipyard in 1903.



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*The tug "Iberville."*—Steel hull; single screw; length over all, 90 feet; breadth of beam, 18 feet; depth of hold, 12 feet; average draught, 10 feet; built at Sorel shipyard in 1897.

*The tug "Lac St. Pierre."*—Wooden hull; twin screw; length over all, 100 feet; breadth of beam, 21 feet; depth of hold, 10 feet; average draught, 7.6 feet; built at Sorel shipyard in 1901.

*The tug "Portneuf."*—Wooden hull; single screw; length over all, 85 feet; breadth of beam, 17.3 feet; depth of hold, 9.8 feet; average draught, 8 feet; built at Sorel shipyard in 1905.

*The tug "Chambly."*—Wooden hull; single screw; length over all, 84 feet; breadth of beam, 18 feet; depth of hold, 9.5 feet; average draught, 9 feet; built at Sorel shipyard in 1893.

*The tug "Emilia."*—Wooden hull; single screw; length over all, 84 feet; breadth of beam, 17 feet; depth of hold, 9 feet; average draught, 8 feet; built at Sorel shipyard in 1898.

*The tug "Lanoraie."*—Wooden hull; single screw; length over all, 84 feet; breadth of beam, 17 feet; depth of hold, 9 feet; average draught, 8 feet; built at Sorel shipyard in 1901.

*The tug "Jessie Hume."*—Wooden hull; single screw; length over all, 72 feet; breadth of beam, 17.2 feet; depth of hold, 10 feet; average draught, 8.5 feet; built at St. Catherines, Ont., in 1876.

*The tug "Lotbinière."*—Wooden hull; twin screw; length over all, 80 feet; breadth of beam, 23 feet; depth of hold, 8 feet; average draught, 7 feet; built at Sorel shipyard in 1903.

*The tug "Carmelia."*—Wooden hull; single screw; length over all, 84 feet; breadth of beam, 17 feet; depth of hold, 9 feet; average draught, 8 feet; purchased in 1904.

*The tug "Contrecoeur."*—Wooden hull; twin screw; length over all, 90 feet; breadth of beam, 22.7 feet; depth of hold, 9 feet; average draught, 7 feet; built at Sorel shipyard in 1910.

*The tug "Varennnes."*—Wooden hull; twin screw; length over all, 96 feet; breadth of beam, 22 feet; depth of hold, 9 feet; average draught, 7 feet; built at Sorel shipyard in 1911.

*The tug "Laviolette."*—Steel hull; twin screw; length over all, 92 feet; breadth of beam, 22 feet; depth of hold, 9.3 feet; average draught, 7 feet; built at Sorel shipyard in 1912.

*The tug "Lavaltrie."*—Steel hull; twin screw; length over all, 92 feet; breadth moulded, 22 feet; depth moulded, 10 feet; average draught, 6 feet 6 inches; built at Sorel shipyard in 1913.

#### *Coal barges, etc.*

*Coal barge "No. 1."*—Wooden hull; length over all, 120 feet; breadth of beam, 24 feet; depth of hold, 10 feet; built in Sorel shipyard in 1898.

*Coal barge "No. 2."*—Wooden hull; length over all, 125 feet; breadth of beam, 25 feet; depth of hold, 11 feet; built at Sorel shipyard in 1900.



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*Coal barge "No. 3."*—Wooden hull; length over all, 98 feet; breadth of beam, 28 feet; depth of hold, 12 feet; built at Sorel shipyard in 1902.

*Coal barge "No. 4."*—Wooden hull; length over all, 98 feet; breadth of beam, 28 feet; depth of hold, 12 feet; built at Sorel shipyard in 1903.

*Coal barge "No. 5."*—Steel hull; length over all, 127 feet; breadth of beam, 32 feet; depth of hold, 10 feet; built at Sorel shipyard in 1911.

*Stone-lifter "No. 3."*—Wooden hull; length over all, 108 feet; breadth of beam, 34 feet; depth of hold, 14 feet; built at Sorel shipyard in 1903.

*Stone-lifter "No. 4."*—Steel hull; length over all, 100 feet; breadth of beam, 32 feet; depth of hold, 12 feet; built at Sorel shipyard in 1910.

*Rock cutter "No. 1."*—Steel hull; length over all, 100 feet; breadth of beam, 36 feet; depth of hold, 9.3 feet; weight of ram, 20 tons; hull and machinery built by the Lobnitz & Co., Renfrew, Scotland, and re-erected at Sorel shipyard in 1912.

*The Self-propelling Hopper barge "No. 1."*—Steel hull; single screw; length between perpendiculars, 180 feet; breadth moulded, 32 feet; depth moulded, 14 feet 6 inches; average draught, 12 feet; deadweight on above draught, 785 tons; indicated horse-power, 500; net capacity of hopper, 530 cubic yards; built by Messrs. Geo. T. Davie & Sons, Levis, Que., in 1913.

*Sounding scow "No. 1."*—Wooden hull; length over all, 60 feet; breadth of beam, 25 feet; depth of hold, 6 feet; built at Sorel shipyard in 1898.

*Sounding scow "No. 2."*—Wooden hull; length over all, 75 feet; breadth of beam, 38 feet; depth of hold, 5 feet; transferred from Prescott agency in 1909, remodelled and improved in Sorel shipyard.

*Sounding scow "No. 3."*—Wooden hull; length over all, 76 feet; breadth of beam, 32 feet; depth moulded, 7 feet 4½ inches; built at Sorel shipyard in 1913.

*Floating shop.*—Wooden hull; length over all, 90.3 feet; breadth of beam, 25 feet; depth of hold, 9 feet; one forge; one scraper; one emery wheel; one drill; one lathe; one 6-horsepower Foss gasoline engine; living quarters for four men; built at Sorel shipyard in 1908.

*Scow "No. 28."*—Winch scow used for fleet in general; length over all, 60 feet; breadth of beam, 18 feet; depth of hold, 7 feet; built at Sorel shipyard in 1908.

*Scow "No. 21."*—Winch scow used for fleet in general; length over all, 40 feet; breadth of beam, 20 feet; depth of hold, 6 feet; built at Sorel shipyard in 1908.

*Hopper Dumping Scows with Hydraulic Power for Closing Gates.*

*No. 1 and No. 2.*—Wooden hulls; with hydraulic power for closing gates; length over all, 97 feet; breadth of beam, 24.5 feet; depth of hold, 9 feet; capacity, 200 cubic yards; built at Sorel shipyard, 1897.

*No. 3 and No. 4.*—Wooden hulls; with hydraulic power for closing gates; length over all, 90 feet; breadth of beam, 18 feet; depth of hold, 7 feet; capacity, 150 cubic yards; built at Sorel shipyard in 1898.

*No. 5, No. 6, No. 7, and No. 8.*—Wooden hulls; with hydraulic power for closing gates; length over all, 97 feet; breadth of beam, 24 feet; depth of hold, 9 feet; capacity, 200 cubic yards; built at Sorel shipyard in 1899 and 1901.



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*No. 9, No. 10, No. 11, No. 12, and No. 13.*—Wooden hulls; with hydraulic power for closing gates; length over all, 98 feet; breadth of beam, 24 feet; depth of hold, 9.5 feet; capacity, 300 cubic yards; built at Sorel shipyard, two in 1901 and three in 1902.

*No. 14, and No. 15.*—Wooden hulls; with hydraulic power for closing gates; length over all, 97 feet; breadth of beam, 24.5 feet; depth of hold, 9 feet; capacity, 300 cubic yards, built at Sorel shipyard in 1904 and 1905.

*No. 16, and No. 17.*—Wooden hulls; with hydraulic power for closing gates; length over all, 93 feet; breadth of beam, 24.5 feet; depth of hold, 8 feet; capacity, 250 cubic yards; built at Sorel shipyard in 1909.

*No. 18, and No. 19.*—Wooden hulls; with hydraulic power for closing gates; length over all, 93 feet; breadth of beam, 24.5 feet; depth of hold, 8 feet; capacity, 250 cubic yards; built at Sorel shipyard in 1911.

*Two dumping scows.*—Wooden hulls; with hydraulic power for closing gates; length over all, 93 feet; breadth of beam, 26.5 feet; depth of hold, 8.5 feet; capacity 250 cubic yards; built at Sorel shipyard in 1912.

*No. 22, and No. 23.*—Wooden hulls; with hydraulic power for closing gates; length over all, 93 feet; breadth of beam, 26.5 feet; depth of hold, 8.5 feet; capacity, 200 cubic yards; built at Sorel shipyard in 1913.

*No. 25, and No. 26.*—Steel hulls; with hydraulic power for closing gates; length over all, 100 feet; breadth of beam, 29 feet; depth moulded, 9 feet 3 inches; capacity, 235 cubic yards; built at Sorel shipyard in 1913.

*Sand scow.*—Steel hull; with hydraulic power for closing gates; length over all, 106.5 feet; breadth of beam, 21 feet; depth of hold, 10 feet; capacity, 200 cubic yards; built at Sorel shipyard in 1912.

*Derrick scow.*—Used at Sorel shipyard in connection with construction and repairs to dredging fleet; length over all, 40 feet; breadth of beam, 20 feet; depth of hold, 5 feet; equipped with a derrick of 5-tons lifting capacity.



## APPENDIX No. 4.

## SOREL SHIPYARD.

SOREL, April 30, 1914.

A. JOHNSTON, Esq.,  
Deputy Minister, Marine and Fisheries,  
Ottawa.

SIR,—I have the honour to submit the following report on work done at the Sorel shipyard during the year ending March 31, 1914.

At the beginning of the fiscal year, all vessels were outfitted, overhauled, and made ready for the season's operations. In April the crews were taken on and all the necessary supplies were put on board.

The Richelieu river was clear of ice on the 28th March, and the St. Lawrence on the 12th April. The first dredges left Sorel on April 22, to be placed at work in the ship channel.

During the season, all the vessels of the dredging fleet were maintained in good order, and had the necessary operating repairs.

The principal repairs to the ship-channel vessels during the fiscal year were the following:—

## DREDGES.

*Dredge No. 1.*—Had operating repairs during the season.

*Nos. 2, 3, 4 and 5.*—Winter repairs to deck, hull, windlass, and overhauling of machinery.

*Dredge No. 6.*—Had operating repairs during summer.

Winter repairs.—The hull, deck and windlass were put in good order. Machinery was overhauled and repaired. A new shoot pump, 8 by 6 cylinders and 12-inch stroke (duplex pattern) was installed on board.

*Dredge No. 7.*—This vessel had ordinary repairs during summer. Casting at end of cutter head was repaired. The twelve furnaces on the four boilers were welded by electricity, and made tight.

The dredge was brought to Sorel for these repairs, and during her stay here few other repairs and alterations were made.

Winter repairs.—The fenders of hull were partly renewed; cotton duck awnings installed to replace wooden panels, two new funnels were made and installed to replace old ones and the discharge pipe outside of hull was renewed. Alterations were also made to Howden's forced-draught apparatus, and repairs to deck-houses and general overhauling of machinery. Twenty-four pontoons were hauled out to renew doubling plates which were cleaned and painted.

*Dredge No. 8.*—Summer repairs: This vessel operating below Quebec, the repairs during the season were made there. Few replace pieces were sent from the shipyard to be installed on board.

Winter repairs.—The inside of boat between frames opposite hoppers was all cleaned by the sand-blast process. Old fenders were partly repaired and new ones fitted between angles all around the hull. The centrifugal pump which was worn out, was saved by adding doubling plates inside and all welded with our electric welding plant.



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A new cutter-head was placed on the suction frame. The discharge pipe of the centrifugal pump was altered and made to discharge overboard in scows. A new companion-way was made in fireman's quarters and one in crew's quarters. All engines, winches, and boilers were overhauled and worn parts renewed.

*Dredge No. 9.*—Summer repairs were general operating repairs made during the season.

Winter repairs.—The compartment opposite hoppers was cleaned with sand-blast, and painted. The fenders were put in good order, the deck over forecastle was strengthened and caulked.

A new dynamo was installed to replace old one which was too small and out of order. This change necessitated heavy alterations to the electric wiring of the vessel.

Three 30-inch gate-valves were made for the discharge pipe of the centrifugal pump and the pipe was renewed.

Main engine high-pressure cylinders were taken to the machine shop to repair seats and valves. Boilers were repaired and the right hand furnace of starboard boiler was welded by electricity, a new funnel with casing was made and installed on board and the winches were overhauled and repaired.

*Dredge No. 10.*—This dredge had ordinary repairs during summer, mostly on buckets.

Winter repairs.—An iron casing around funnel was placed to protect the deck-houses against fire. Light repairs were made to deck-houses and fenders. A new dipper arm, 50 feet long, was made and installed, so that the vessel could dig in shallow water—that is, about 16 feet depth. Main hoisting drum frictions were lined with maple wood, and other minor repairs were made to machinery.

*Dredge No. 11.*—This dredge had ordinary operating repairs, mostly on buckets.

Winter repairs.—General overhauling of machinery and repairs to hull, dipper arm and buckets were made.

On this dredge and on *No. 10* we tried to keep the anchor spuds in place for wintering, instead of unshipping them and a very good success was obtained.

*Dredge No. 12.*—This is a new steel vessel which was placed in commission for about one year, and did not require any summer repairs.

Winter repairs.—General overhauling of machinery and repairs to fenders were made.

*Dredge No. 13.*—This is also a new steel dredge which was placed in commission during summer. Very light repairs were required. Had general overhauling of machinery during winter.

*Dredges Nos. 1 to 6, 12 and 13.*—Those dredges had all their steel buckets repaired or renewed, and links rebushed. The buckets required, including spare ones for next season, number about 500.

#### REPAIRS TO DOMINION STEAMERS.

*Steamer "Lady Grey."*—At the beginning of the season, the bulwark, which was bent by the ice the previous winter, was straightened up and put in good order.

The two masts for wireless service were lengthened, main and auxiliary engines overhauled. The vessel was painted inside and outside and the upper deck repaired and caulked.



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*Steamer "Frontenac."*—This ship had only ordinary repairs to machinery during summer. The 5 by 5 inch windlass was changed for a 6 by 5 inch of the same make. A new steel rudder was made to replace the old wooden one. The engine, boiler, and deck-houses were repaired and put in good order.

*Steamer "Bellechasse."*—Electricians were sent a couple of times to Quebec to repair the electric wiring and turbo generator of this vessel.

Winter repairs.—A water tight door, a refrigerator and a gasoline launch were supplied, besides a good overhauling and repairs to both dynamos.

## TUGS.

*Tug "Carmelia."*—This vessel was hauled out on the slipway on 29th August, 1913, to have her tail shaft repaired.

Winter repairs.—General overhauling of engine, boiler and smoke box was made.

*Tug "Chambly."*—The tug had no summer repairs.

Winter repairs.—Consisted of extra heavy repairs and alterations to boiler; water pan removed, and about 100 boiler tubes renewed.

Was hauled out for winter to repair hull, renew stern tubes and propeller. Deck-houses were lengthened about 7 feet to put cooks' room on main deck. The hull was scraped and painted, and part of old deck-houses rebuilt. Old windlass of C. G. S. *Frontenac* was installed on board.

*Tug "Contrecoeur."*—This boat was hauled on July 31, to have her rudder repaired, was hauled out again on November 25, to put on a new propeller. The hull was scraped and painted. On December 1, she was hauled on the slipway again for renewing *lignum vitæ* bushes, and caulking of hull.

Ordinary winter repairs were made to engines and boiler, also to woodwork.

*Tug "De Levis."*—The *De Levis* had no repairs during summer, was hauled out on September 29, to repair the rudder and have some caulking done to the hull, was hauled out again on December 6, to repair outside planking under the water line.

Hull repairs.—A steel rudder was made to replace old wooden one.

*Tug "Emilia."*—Summer repairs: She was hauled out on the ways on August 12, to caulk her hull, which was also scraped and painted.

Winter repairs.—She had heavy repairs on boilers, water pan was removed and sixty-six boiler tubes renewed, and deck-houses partly rebuilt.

*Tug "Jessie Hume."*—This tug had ordinary repairs during summer, and general overhauling of machinery, during winter.

*Tug "James Howden."*—This vessel was operating below Quebec during summer, with dredges *Beaujeu* and *Galveston*, and repairs were made there. Replace parts were ordered and shipped direct from shipyard.

Winter repairs.—General repairs to wood work and hull were made.

*Tug "Iberville."*—Summer repairs: She was hauled out on 27th August, to renew her propeller, scraping and painting her hull.

Winter repairs.—Heavy repairs to boilers were made, several tubes removed to clean inside of boiler, and combings of deck-houses renewed. The inside of hull was scraped and painted, deck caulked and general overhauling of engines made.

*Tug "Lac St. Pierre."*—This tug had light repairs during summer, hauled out on November 18, to renew *lignum vitæ* bushes; steel sheeting of hull repaired; hull scraped and painted.

During winter she had ordinary repairs and overhauling to hull and machinery.



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*Tug "Laviolette."*—This is a new boat, and had practically no repairs during summer, but a general overhauling during winter.

*Tug "Lanoraie."*—Was hauled out on the 11th September, to renew propellers. The hull was caulked, scraped, and painted, and few other light repairs made to machinery during summer.

Winter repairs.—Overhauling of machinery, etc.

*Tug "Lavaltrie."*—This being a new vessel, no repairs were required during summer and very light during winter.

*Tug "Lotbinière."*—Was hauled out on the 25th September, to replace her rudder, scrape and paint the hull.

*Tug "Portneuf."*—Light repairs were made during season and was hauled out on the 21st August to renew *lignum vitæ* bushes of tail shaft. The hull was scraped and painted. She was again placed on slip-way on 13th September to repair her rudder.

*Tug "Varennès."*—This vessel had very light operating repairs and general overhauling of machinery during the winter.

#### *Rock Cutter and Stonelifters.*

*Rock cutter.*—Had no operating repairs except general overhauling of machinery during winter.

*Stone lifters Nos. 2, 3 and 4.* During winter these vessels had ordinary repairs to machinery.

#### SOUNDING SCOWS.

*Sounding scow No. 1.*—Had light repairs.

*Sounding scow No. 2.*—Was hauled out on June 17, on January 28 and 4th December for caulking. This boat is old and temporary repairs only were made so as to keep her in commission.

*Sounding scow No. 3.*—Was hauled out on July 25 for repairs to rudder.

#### DUMPING SCOWS.

Fourteen dumping scows were hauled out for repairs during the season. The winch scow of dredge No. 7 was also taken up for winter, to have her bottom repaired and caulked.

*Dumping scow No. 2.*—Was rebuilt from water line up and had new hoppers and doors.

#### COAL BARGES.

*Coal barge No. 1.*—Was hauled out on September 29, to have rudder repaired and hull caulked.

Winter repairs.—The hatches were widened, had two masts replaced by a single one and combing of deck-houses renewed. During winter she had general repairs to hull, deck-houses and winches.

*Coal barge No. 2.*—Summer repairs: The barge was hauled out on September 23, to repair and caulk the hull. Hatches were widened, alterations made to masts and extension to deck-house.



## SESSIONAL PAPER No. 21

*Coal barge No. 3.*—Had no repairs during summer. Ordinary overhauling to hull and winches was made during winter.

*Coal barge No. 4.*—General repairs to hull and winches were made and widening of hatches.

*Coal barge No. 5.*—Had repairs to fenders, windlass, steering gear and general overhauling during winter.

Shipyard launches were repaired and put in good order.

All the above-mentioned vessels were painted, as usual, early in spring.

*Tug "O. Paul."*—Was hauled out on June 13, but repairs were made by the proprietor of the boat.

*Lightship No. 17 (Quebec Agency).*—Was taken to Sorel during the summer. The machinery was dismantled and shipped to Prescott and the boat kept there for wintering.

*Gauge houses (river St. Lawrence ship channel).*—Six gauge houses were erected and installed on the St. Lawrence by our men, under the supervision of Mr. Price, from Ottawa, and all necessary supplies in connection with them taken from the shipyard.

REPAIRS TO VESSELS OF CONSTRUCTION AND MAINTENANCE OF LIGHTS BRANCH, DEPARTMENT  
MARINE AND FISHERIES.

*Steamer "Dollard."*—This vessel was built at Collingwood and put in commission during summer, and was sent to Sorel to have her main hoisting-winch for handling buoys installed. All the wooden decks had to be recaulked. The hoisting arrangements of the derrick and buoy lifting-gear had to be altered. The boat was partly repainted and varnished.

A complete set of manila rope fenders was prepared and installed on board. A good many other alterations and new work had to be done during the time the boat remained here, about three weeks. When the vessel went to work, it was found that her rudder was too small, and the steering gear not powerful enough to handle the boat. At the end of the season, after picking up the buoys, the *Dollard* took her winter quarters at the shipyard, where numerous alterations were made.

The fore-castle deck was sheathed with  $\frac{7}{8}$ -inch wood. The main engine overhauled, boilers caulked, light repairs to deck-houses made, the rudder enlarged, and the steering gear replaced by a stronger one.

The steel platform inside of engine room was extended and widened to make room for the hand pump.

*Steamer "Verchères."*—She was hauled out on the ways on 6th September, to have her hull caulked. Light repairs were made to different parts of the boat.

*Steamer "Shamrock."*—Was hauled out on 15th October, to repair and caulk her hull under water line, and had light repairs during summer.

Winter repairs.—Consisted of general overhauling of machinery, winches, windlass and hull.

*Tug "Maisonnette."*—Was sold to a private firm in Ontario. On the 22nd April, the boat was hauled out to repair the hull under water line, so as to make her seaworthy for a trip to the Great lakes.



5 GEORGE V., A. 1915

*Steamer "Hosanna."*—This vessel had no repairs during summer, and winter repairs consisted of heavy repairs to hull above water line, the partly rebuilt, bulwark rail renewed, the cotton duck of upper deck repaired and overhauling of boiler and engine.

*Scow "Adelard."*—Was hauled out on November 5, and steel sheeting placed on bow and sides of hull at the water line.

## CONSTRUCTION OF LIGHTS BRANCH.

A good deal of work was done for this department, preparing supplies and repairing their machinery, such as winches, concrete mixer, etc.

*Barge "Acetylene."*—During summer, all necessary equipment was supplied to this vessel for the maintenance of buoys, such as chains, slings, buoy irons, fittings, etc.

Winter repairs.—Railings, house pipe, fenders, derrick were put in good order, and a coat of paint put on inside and outside of boat.

## REPAIRS TO VESSELS OF THE DEPARTMENT OF PUBLIC WORKS.

*Dredge "W. S. Fielding."*—During the year one cast steel bucket was shipped to St. John, N.B., for this vessel, one cast-steel bucket roller, and cast-steel plate rollers, one cast-steel shell for lower tumbler were supplied, five cast-steel shoes for upper tumbler, and five steel bushes for lower tumbler were ordered and supplied.

*Dredge "Richelieu."*—Had repairs to crane, to swinging table and dipper, etc., etc.

*Dredge "Challenge."*—Spud anchors were placed on this vessel, her machinery overhauled and a shaft repaired.

*Dredge "St. Louis."*—Repairs were made to swinging-table levers. Renewal parts were prepared here and other light repairs to the machinery. The pump was put in good order, machinery and hull had light repairs.

*Dredge No. 123.*—This boat came to the shipyard to be rigged up after its completion. A crane anchor, spuds, dipper-arms and dipper were installed and a few alterations made to the machinery.

*The "Mina G."*—Had light repairs to engine.

*The "Maggie K."*—The engine of this tug was repaired.

*Dredge No. 3.*—The dumping lever "A" frame and dipper door of this vessel were repaired.

*Tug "Deslisle."*—Was hauled out on the 25th August, to have hull caulked.

*Tug "Daisy."*—Was hauled on the ways on 28th July to repair tail shaft and have hull caulked and fitted to propellor wheel.

*Tug "Alva."*—Was hauled out on the 11th June to repair rudder and caulk hull, and tighten stern bearing. Was hauled again on the ways on the 25th September to repair tail shaft.

## NEW CONSTRUCTIONS.

Work was continued on construction No. 36—a twin screw steel tug of the following dimensions:—

Length, B.P.....	84 ft. 6 in.
" O.A.....	92 ft. 0 in.
Breadth, moulded.....	22 ft. 0 in.
Depth, moulded.....	10 ft. 0 in.
Mean draught on trial.....	6 ft. 6 in.
Indicated horse-power on trial....	350



## SESSIONAL PAPER No. 21

The vessel was completed, and after a successful trial trip on June 3, 1913, was at once put into commission. The mean speed on trial was 11.32 miles.

The machinery consists of twin-screw compound jet condensing engines having cylinders 11 inches and 22 inches diameter by 18-inch stroke, supplied with steam from a Scotch boiler 12 feet diameter by 10 feet long, with a working pressure of 150 pounds. The vessel was named *Lavaltrie*.

*Construction No. 37 was completed.*—This vessel is a steel non-propelling elevator dredge of the following dimensions:—

Length, O.A. ....	180 ft. 0 in.
Breadth, moulded.....	40 ft. 0 in.
Depth, moulded.....	14 ft. 0 in.
Draught loaded.....	9 ft. 0 in.

The dredging machinery is a compound jet condensing engine built by Fleming and Ferguson, Paisley, Scotland, having cylinders 17-inch and 34-inch by 36-inch stroke, supplied with steam from two Scotch boilers 12 feet diameter by 10 feet long, with a working pressure of 130 pounds. The machinery developed 450 indicated horse-power. The buckets are forty-three in number of 16 cubic feet capacity. The dredging speed is sixteen buckets per minute. The dredge was completed in August and at once started working, everything working satisfactorily until laying up for the winter. This vessel is named *Dredge No. 13*.

*Construction No. 39.* A wooden scow 76 feet by 32 feet by 7 feet 4½ inches, was completed in June, 1913. She is fitted with testing-bar and winch, and is used for testing the channel.

*Construction No. 43* is two wooden dump scows Nos. 22 and 23, having a capacity of 200 yards and fitted with hydraulic machinery for the hopper doors. The dimensions are 93 feet by 26 feet 6 inches by 8 feet 6 inches. They were finished in July, 1913.

*Construction No. 44* is a steel stone lifter (*Stone lifter No. 5*) fitted with steam winch and stone grips capable of lighting stones up to 60 tons in weight. She was completed in September, but was not put in commission. The dimensions are 100 feet by 36 feet by 9 feet 10 inches.

*Constructions Nos. 45 and 46* are two new tugs of the following dimensions:—

Length, B.P. ....	93 ft. 0 in.
“ O.A. ....	100 ft. 0 in.
Breadth, moulded.....	22 ft. 6 in.
Depth, moulded.....	10 ft. 0 in.
Draught mean .....	7 ft. 0 in.
Indicated horse-power .....	450

The machinery consists of twin-screw compound jet condensing engines having cylinders 12-inch and 24-inch diameter by 18-inch stroke supplied by steam from a Scotch boiler 13 feet 6 inches diameter by 10 feet 6 inches long, with a working pressure of 130 pounds. The engines in *No. 45* were built by Pontbriand Company, Limited, of Sorel; those for *No. 46* are being built in the shipyard. The boilers were purchased in Lévis. These tugs are completed as far as the hulls are concerned; and as soon as the shafting and propellers are installed, in the spring, they will be launched, probably in the month of May, 1914. These tugs are having fire pumps installed of a capacity of 1,200 gallons per minute.

*Constructions No. 47 to 50* are four steel dumping scows of the following dimensions:—

Length .....	140 ft. 0 in.
Breadth, moulded.....	30 ft. 0 in.
Depth, moulded .....	11 ft. 9 in.
Capacity.....	450 cubic yards.

These scows are practically completed and will be launched during the month of May, 1914.



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*Constructions Nos. 51 and 52* are two steel dumping scows (*Nos. 25 and 26*) of the following dimensions:—

Length .....	100 ft. 0 in.
Breadth, moulded .....	29 ft. 0 in.
Depth, moulded .....	9 ft. 3 in.
Capacity .....	235 cubic yards.

They were launched in July and August, 1913. They are the first steel dumping scows used in the ship channel, and have proved very satisfactory.

*Construction No. 53* is a gasoline launch, (*Margot*) built of wood for general shipyard use, of the following dimensions:—

Length .....	30 ft. 0 in.
Breadth, moulded .....	7 ft. 0 in.
Depth, moulded .....	3 ft. 6 in.
Draught of water, mean .....	2 ft. 3 in.

She is fitted with a "Standard" heavy duty engine of 25 horse-power, and has a speed of 11½ miles. She was launched in August, 1913.

*Construction No. 54* is a twin-screw steel, wood sheathed, fisheries patrol steamer for lake Winnipeg, of the following dimensions:—

Length, B.P. ....	151 ft. 0 in.
" O.A. ....	160 ft. 6 in.
Breadth, moulded .....	26 ft. 6 in.
Depth, moulded .....	13 ft. 6 in.
Draught .....	7 ft. 6 in.
Indicated horse-power .....	900

The vessel was ordered in May, 1913, and the steel was ordered on June 11, but delivery was not completed of the steel until December. On July 2 work on drawings was stopped, and amended design prepared by order of the deputy minister. This was submitted on July 14, and it was decided to proceed on the original design. On August 18 the line drawing was submitted, and after some discussion an amended line drawing, with an altered general arrangement, was submitted on September 1, work being suspended pending a decision on the alterations. On October 16 orders were received to proceed with the vessel, making her 11 feet longer. The new design was approved on October 29, and work commenced in the mould-loft on November 17. The steel work was commenced on December 23, and the keel was laid on January 23, 1914. The whole of the steel work, amidships, is finished, and as soon as the cast-steel stem and stern posts are received, the balance of the work will be completed. This should be by the end of May, 1914. The vessel has then to be marked, taken down, and shipped to Selkirk, Man., where it will be re-erected, launched and completed by men sent from the shipyard. Most of the auxiliaries and fittings have been ordered and the engines which are twin-screw, triple expansion jet condensing engines, having cylinders 11-inch, 18-inch and 30-inch diameter by 20-inch stroke, supplied with steam from two Scotch boilers 11 feet diameter, by 10 feet 6 inches long, working under Howdens forced draught, and having working pressure of 180 pounds. The engines are being built by the Polson Iron Works of Toronto.

*Constructions Nos. 55 and 56* are two catamarans, each consisting of two steel circular pontoons with pointed ends, 30 feet long by 3 feet diameter. They are 12 feet apart and strongly braced together with steel girders which support a deck about 20 feet by 18 feet. These catamarans are for the use of the St. Lawrence Levels Commission, and are equipped with winches, etc., for handling current-meters.

*Construction No. 57* is a twin-screw steel testing steamer of the following dimensions:—

Length, B.P. ....	140 ft. 0 in.
" O.A. ....	147 ft. 0 in.
Breadth, moulded .....	35 ft. 0 in.
Depth, moulded .....	15 ft. 0 in.
Draught .....	10 ft. 0 in.



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The vessel will be fitted with twin-screw compound surface condensing engines having cylinders 14 inches and 28 inches diameter by 21 inches stroke, supplied with steam from a Scotch boiler 15 feet diameter by 11 feet long, and having a working pressure of 130 pounds. The vessel will be equipped with a testing bar and winch similar to those fitted on the testing-scows, and will be arranged to test to 55 feet of water.

Plans have been prepared, steel material ordered, and the vessel has been laid off in the mould loft and everything prepared to make a start as soon as the steel arrives, which should be during the month of May. The boiler material has been delivered.

*Construction No. 58* is a wooden flat scow for general shipyard use, of the following dimensions:—

Length.....	60 ft. 0 in.
Breadth .....	28 ft. 0 in.
Depth.....	7 ft. 0 in.

This vessel will be launched during the month of May.

*Construction No. 59* is a twin-screw steel tug for staff use below Quebec, and will replace the *James Howden*.

Length.....	118 ft. 0 in.
Breadth, moulded.....	24 ft. 0 in.
Depth, moulded.....	12 ft. 0 in.

The machinery will consist of twin-screw compound surface condensing engines having cylinders 14 inches and 28 inches by 21 inches stroke, supplied with steam from a Scotch boiler 15 feet diameter by 11 feet long, 130 pounds working pressure. The boiler material has been delivered.

*Construction No. 60* is a single-screw steamer for buoy service on the Ottawa river, and will be composite built, of the following dimensions:—

Length.....	100 ft. 0 in.
Breadth.....	21 ft. 0 in.
Depth.....	9 ft. 0 in.

The machinery will consist of compound jet condensing engines having cylinders 10 inches and 20 inches diameter by 14 inches stroke, supplied with steam from a Scotch boiler 9 feet 6 inches diameter by 10 feet long, working pressure 130 pounds. The boiler material is ordered. Tenders have been asked for the engines of *Nos. 57, 59 and 60*.

*Construction Nos. 61 and 62* are two single-screw hopper barges of the following dimensions:—

Length, B.P. ....	210 ft. 0 in.
Breadth, moulded .....	35 ft. 0 in.
Depth, moulded .....	10 ft. 0 in.
Draught, loaded .....	16 ft. 6 in.
Capacity of hopper .....	950 cubic yards.

Machinery will consist of triple expansion surface condensing engines having cylinders 18½ inches, 30 inches and 50 inches diameter by 36 inches stroke, supplied with steam from two Scotch boilers 14 feet 6 inches by 10 feet 6 inches long, 180 pounds working pressure. Indicated horse-power, 1,250.

*Construction No. 63* is a single-screw steel barge of the following approximate dimensions:—

Length .....	160 ft. 0 in.
Breadth.....	32 ft. 0 in.
Depth .....	12 ft. 6 in.
Capacity.....	700 tons.

The design of the barge will be commenced as soon as possible.



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*Constructions Nos. 64 to 67* are four steel dumping scows of the following dimensions:—

Length.....	100 ft. 0 in.
Breadth.....	29 ft. 0 in.
Depth.....	10 ft. 3 in.
Capacity.....	250 cubic yards.

These scows will be similar to *Nos. 51 and 52*, but 1 foot deeper. Drawings and steel orders are being prepared.

Progress on new constructions has generally been hampered owing to the great length of time elapsing between the ordering of the steel material and its delivery—for example: *Constructions Nos. 45 and 46*, the requisition for steel was sent August 17, 1912, and *Nos. 47 to 50*, on September 9, 1912; none of this material was delivered before the middle of March, 1913, and was not completed until May 29. As already stated in this report, the material for *No. 54* was ordered in June, 1913, and delivery was not completed until December. As regards *No. 57*, the detail specification of steel was sent January 21, 1914, and none has been delivered. A contract is being placed for 2,500 tons of steel to cover the new constructions which will be commenced during the coming year.

#### MAINTENANCE AND IMPROVEMENTS TO BUILDINGS AND PLANT OF THE SHIPYARD.

*Building No. 1.*—Proposed office. Plans prepared.

*Building No. 2, boiler shop.*—Roof repaired and painted.

*Building No. 4, office and store.*—Outside of building painted and few alterations were made inside.

*Building No. 5, machine shop.*—Interior of building was whitewashed to improve its lighting.

*Buildings Nos. 6, 7 and 8.*—Had roof repaired and painted.

*Building No. 9, carpenter shop.*—Was lengthened 20 feet to give more working space, and ten windows were made to improve lighting.

*Buildings Nos. 10, 11, 12, 13 and 14, ice house and stores shed.*—The roof was painted.

*Building No. 15, storage for fleet.*—Had extra partitions made for new boats in commission.

*Building No. 16, power-house.*—A temporary house was built over the new air compressor, concrete made around machinery and roof of building painted.

*Buildings No. 17 and 18, saw-mill and paint-shop.*—These buildings had no repairs.

*No. 19, pattern shop.*—New shelves to store patterns.

*Nos. 20, 21 and 22, dry lumber shed, fire-hold No. 2 and shed for castings.*—No repairs were required on these buildings.

*Nos. 23 and 24, dry kiln and shed for machinery.*—The roof was painted.

*No. 25.*—Was demolished.

*Nos. 26 and 27, main gear-house and lumber-yard shed.*—Had no repairs.

*No. 28, oil shed.*—This is a new fireproof building. The lower story was built in concrete, upper story of steel and corrugated sheeting with steel frames and doors.

*No. 29, new joiner shop.*—New one-story building, erected in line and next to *No. 20*. The dimensions are 87 feet by 41 feet.



## SESSIONAL PAPER No. 21

*New sheer legs.* A 130-ton steel crane was erected on concrete pier near wharf No. 4. Small building was also built to cover machinery.

*Wharf No. 4.*—So as to have more coaling space a new 100-foot extension was built. Heavy repairs had also to be made to this wharf.

*Time recorders.*—During the year a new system of time clocks was installed in the shipyard. Thirteen "Globe" W. A. Wood time recorders were purchased and placed in the shipyard. This system is giving very good results.

*Fire protection.*—During winter two tugs were kept under steam, night and day, with firemen on board for fire protection to vessels of fleet.

*Steam box.*—A new steam box 24-inch by 24-inch by 60 feet long was built in steel for the carpenters' department.

*Air compressor.*—As the work increased considerably and the air pressure for tools was very inadequate, another air compressor was purchased to be placed in power-house. This is a Canadian-Ingersoll-Rand, 16 by 16, class "RP—2," cross compound power-driven compressor, having a capacity of 744 cubic feet free air per minute when running at its normal speed of 200 r.p.m.

In connection with the air compressor service, a new motor was installed. This is a 125 horse-power, 600 r.p.m., 2,200 volt, 30-cycle two-phase inductor motor, complete with pulley 28 inches diameter by 16 inches face, sliding base, and T-20 B. controller for Rheostat for one-minute starting service.

*Drinking water.*—Water-pipe connections were made to St. Joseph waterworks to supply fresh water to the shipyard from river St. Lawrence, for drinking purposes only, as the water from the port of Richelieu river was considered unwholesome for our men.

*Electric welding plant.*—So as to repair castings and heavy pieces of machinery on vessels, a 400 ampere O. & C. electric welding and cutting outfit was purchased, and installed in the shipyard. The outfit is complete with dynamotor, switchboard, shields, electrodes, etc. The switchboard is equipped for two operators using the metal electrodes, each operator having free range of current. The work performed by this process is quite satisfactory, and boilers, heavy castings, etc., are rapidly and economically repaired without having to be taken out of the ships.

*Sand blasting.*—As we always have a great amount of cleaning and scaling to do on hulls of fleet vessels, it was found necessary to purchase an apparatus for this kind of work. It is a No. 1 Farnham sand blast apparatus, 500 pounds capacity, with complete outfit. This plant is highly satisfactory and is constantly at work during the season, cleaning the hulls of the various boats and dredges, for the spring painting, etc.

*General.*—All the shipyard buildings were kept in good order, and the machinery overhauled and improved.

The vessels of the dredging fleet were all painted before the opening of navigation, and, as usual, the ice was cut around them during winter. All roads were maintained in good order. Fences and sheds were whitewashed.

All wharfs and ways had the ordinary repairs and were kept in good condition.

The force employed during the fiscal year varied from 654, in June, to 1,181, in March, 1914, and averaged 836 daily.

The financial statement shows the total amount expended at the shipyard and ship channel to have been \$1,466,591.40.

I have the honour to be, sir,

Yours faithfully,

W. S. JACKSON,

*Superintendent of Shipyard.*



STATEMENT of Expenditure Government Shipyard, Sorel, on account of River St. Lawrence Ship Channel for the Fiscal Year ending March 31, 1914.

	Fuel.	Wages.	Board.	Supplies.	Main- tenance and Repairs.	Proportion of General Expenditure	Total for each Vessel.	Grand Total.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
<i>Operating Expenses of Dredging Fleet -- River St. Lawrence Ship Channel.</i>								
Dredge No. 1.....	6,697 89	8,888 78	2,917 19	2,849 96	13,653 35	2,399 26	37,406 43	
Tug Varennes.....	4,383 94	5,228 87	2,108 84	1,218 71	2,171 89	1,035 74	16,147 99	
Dredge No. 2.....	7,397 56	8,955 16	2,934 42	2,513 34	17,711 00	2,707 97	42,219 45	
Tug Chambly .....	2,533 28	4,610 24	1,753 15	619 80	5,607 37	1,036 53	16,160 37	
Dredge No. 3.....	7,289 55	9,007 16	2,924 94	1,969 30	14,392 55	2,438 76	38,022 26	
Tug Emilia.....	2,724 53	4,069 93	1,530 69	1,721 81	3,481 02	927 16	14,455 14	
Dredge No. 4 .....	6,817 05	9,448 92	2,934 95	2,736 69	10,624 94	2,231 72	34,794 27	
Tug Iberville.....	3,822 53	4,833 28	1,826 38	963 78	4,521 85	1,094 38	17,062 20	
Dredge No. 5.....	11,038 05	9,781 37	3,103 60	5,214 78	18,449 24	3,261 44	50,848 48	
Tug Lac St. Pierre.....	5,246 78	4,967 72	1,966 46	2,029 98	1,936 22	1,106 67	17,253 83	
Dredge No. 6.....	6,641 55	8,953 74	2,856 96	2,569 18	18,508 51	2,709 24	42,239 18	
Tug Lanoraie .....	2,337 52	4,086 02	1,576 54	978 02	1,419 45	712 61	11,110 16	
Dredge No. 7.....	28,384 76	16,535 98	5,045 96	5,397 18	35,368 87	6,218 49	96,951 24	
Tug Lotbinière.....	3,621 63	5,423 37	2,025 89	891 73	2,233 50	972 95	15,169 07	
" Carmelia .....	2,151 68	2,348 91	826 99	702 85	2,431 83	579 97	9,042 23	
Dredge No. 8.....	22,019 48	15,814 77	4,729 59	3,699 37	30,696 80	5,274 55	82,234 56	
" 9 .....	17,127 98	13,733 22	3,843 87	4,474 32	28,153 08	4,614 72	71,947 19	
Tug James Howden.....	3,772 76	5,247 58	1,890 41	1,552 57	5,535 12	1,233 55	19,231 99	
Dredge No. 10 .....	8,241 39	9,304 78	2,568 94	2,725 67	13,032 42	2,458 62	38,231 82	
Tug Contrecoeur.....	4,417 70	5,314 14	1,988 23	1,278 42	2,530 10	1,064 27	16,592 86	
Dredge No. 11.....	9,033 39	8,714 16	2,318 01	2,851 60	11,821 91	2,380 89	37,119 96	
Tug Portneuf.....	2,799 94	4,363 02	1,645 87	1,335 97	2,789 44	886 46	13,820 70	
Dredge No. 12.....	10,412 55	9,761 35	3,325 68	4,111 37	12,298 48	2,735 24	42,644 67	
Tug Lavolette .....	4,292 77	4,819 51	1,829 15	1,393 46	1,482 02	946 96	14,763 87	
Dredge No. 13.....	5,998 05	4,682 64	1,463 57	1,182 99	6,786 15	1,378 50	21,491 90	
Tug Lavaltrie .....	3,955 27	3,829 96	1,437 01	1,965 92	1,693 41	882 86	13,764 43	
<i>Fleet Generally.</i>								
Str. De Levis .....	3,741 75	6,071 72	2,380 58	1,842 01	6,868 08	1,432 69	22,336 83	
Tug Jessie Hume.....	2,490 75	2,297 36	674 03	852 13	6,284 63	863 48	13,462 38	
Floating machine shop .....	..	1,002 23	460 78	380 42	638 89	170 13	2,652 45	
Stone Lifter No. 3.....	130 50	1,550 11	430 17	144 15	2,643 19	335 70	5,233 82	
" 4 .....	387 00	2,415 85	603 16	842 18	2,205 12	442 29	6,895 60	
Rock Cutter " 1 .....	2,830 50	4,526 71	1,516 79	1,890 16	2,177 15	986 95	13,828 26	
	202,740 08	210,588 56	69,438 80	64,899 82	290,147 58	57,420 75	895,235 59	895,235 59







STATEMENT of Revenue and Expenditure, Government Shipyard, Sorel, for the Fiscal Year 1913-14.

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Year.	Amount.	Year.	Amount.
1914.	\$ cts.	1914.	\$ cts.
March 31 To Appropriation for river St. Lawrence ship channel.....\$ 894,000 00		March 31 By operating dredging fleet.....\$ 895,235 59	
Amount overdrawn..... 109,795 22	1,003,795 22	Improvements to Sorel shipyard. .... 50,595 95	
Appropriation for improvements to dredging plant:		Construction for dredging fleet..... 5,666 40	
Construction No. 37, elevator dredge.\$ 67,377 90		Water levels investigation re St. Lawrence ship channel. .... 16,956 44	
" No. 44, stone lifter No. 5. 13,181 65		Stores and materials..... 5,465 26	973,919 64
" No. 45-46, 2 twin screw steel tugs..... 56,321 72		Improvements to dredging plant:	
" No. 47-50, 4-450 cu. yd. 171,625 30		Construction No. 37, elevator dredge.. 67,377 90	
" No. 51-52, 2-230 cu. yd. 34,025 58		" No. 44, stone lifter No. 5. 13,181 65	
" No. 58, flat wooden scow. 4,801 92		" No. 45-46, 2 twin screw steel tugs..... 56,321 72	
Fisheries patrol steamer for lake Winnipeg.....		" No. 47-50, 4-450 cu. yd. steel dumping scows.. 171,625 30	
Steamer for testing and sweeping river St. Lawrence ship channel.....	347,334 07	" No. 51-52, 2-230 cu. yd. steel dumping scows.. 34,025 58	
Re construction of hopper barge No. 1.....	38,102 39	" No. 58, flat wooden scow 4,801 92	
Construction of lights, P.Q.....	693 40	Fisheries patrol steamer for lake Winnipeg.....	347,334 07
Maintenance of lights, P.Q.....	31,918 00	Steamer for testing and sweeping river St. Lawrence ship channel.....	38,379 34
C.G.S. Acetylene.....	6,074 67	Re construction of steamer Bellechasse.....	693 40
" Bellechasse.....	372 47	" hopper barge No. 1.....	664 69
" Dollard.....	347 16	dredgers at Collingwood, Ont....	33,979 17
" Frontenac.....	1,781 17	New icebreaker.....	2,970 18
" Lady Grey.....	8,282 60	Construction of lights, P.Q.....	1,377 76
" Lambton.....	7,106 69	Maintenance of lights, P.Q.....	6,131 86
" Maggie May.....	7,292 68	C.G.S. Acetylene. ....	1,375 96
" Minto.....	140 13	" Bayfield.....	718 87
" Shamrock.....	114 54	" Bellechasse.....	1 19
" Simcoe.....	70 32	" Dollard.....	10,975 51
" Verchères.....	3,560 10	" Frontenac.....	12,317 07
Department of Public Works	26 38	" Lady Grey.....	9,850 09
Steamer Maisonneuve.....	4,403 71	" Lambton.....	9,339 75
Prescott agency.....	3,014 51	" Maggie May.....	156 02
Quebec agency.....	219 92	" Montcalm.....	114 54
Signal service.....	873 96	" Minto.....	5 20
Lightship No. 17.....	621 73	" Shamrock.....	70 32
	325 26		5,041 09
	75 02		



The Richelieu & Ontario Nav. Co.....	41 15	" <i>Simcoe</i> .....	26 38
Petty sales.....	4 15	" <i>Verchères</i> .....	5,904 23
		Department of Public Works (Repairs and supplies to dredgts, tugs, etc.).....	3,081 42
		Steamer <i>Maisonnette</i> .....	219 92
		Prescott agency.....	873 96
		Naval Service Department.....	4 95
		Quebec agency.....	621 73
		Signal service.....	326 92
		Lightship No. 17.....	75 02
		The Richelieu & Ontario Nav. Co.....	41 15
	1,466,591 40		1,466,591 40

Louis LACOUTURE,  
*Accountant.*

W. S. JACKSON,  
*Superintendent of Shipyard.*

SOREL SHIPYARD, March 31, 1914.



## APPENDIX No. 5.

STATEMENT OF APPROPRIATION AND EXPENDITURE of Marine and Fisheries Department  
for fiscal year ended March 31, 1914.

Service.	Appropriation.	Expenditure.	Balance.
	\$ cts.	\$ cts.	\$ cts.
Ocean and river service—			
Dominion steamers and icebreakers.....	1,000,166 86	999,186 57	980 29
Examination of masters and mates.....	16,500 00	13,762 66	2,737 34
Rewards for saving life, etc.....	140,000 00	139,885 36	114 64
Investigations into wrecks.....	18,400 00	8,754 71	9,645 29
Expenses of schools of navigation.....	8,000 00	2,477 82	5,522 18
Registration of shipping.....	2,700 00	2,481 17	218 83
Removal of obstructions in navigable waters.....	20,000 00	1,399 46	18,600 54
Winter mail service.....	11,000 00	7,516 78	3,483 22
Inspection of live stock shipments.....	5,000 00	2,438 64	2,561 36
Subsidy to wrecking plants.....	45,000 00	34,281 53	10,718 47
Unforeseen expenses.....	5,000 00	4,093 36	906 64
	1,271,766 86	1,216,278 06	55,488 80
Public Works chargeable to capital—			
River St. Lawrence ship channel ...	894,000 00	1,004,145 22	} 511,241 31
Dredging plant for river St. Lawrence ...	1,317,000 00	695,613 47	
New icebreaking steamer for river St. Lawrence. ..	250,000 00	240 00	
	2,461,000 00	1,699,998 69	761,001 31
Lighthouse and coast service—			
Salaries and allowances to lightkeepers.....	450,000 00	420,616 13	29,383 87
Agencies, rents and contingencies.....	140,000 00	136,527 94	3,472 06
Maintenance and repairs to lighthouses.....	700,000 00	699,785 90	214 10
Construction of lighthouses and aids to navigation.....	1,000,000 00	851,964 87	148,035 13
Icebreaking in Thunder bay, etc.....	30,000 00	29,856 33	143 67
Signal service.....	21,000 00	19,176 11	1,823 89
Administration of pilotage, etc.....	41,000 00	40,918 28	81 72
Pensions to retired pilots.....	6,300 00	5,604 03	695 97
Maintenance and repairs to wharves.....	10,000 00	9,165 88	834 12
Telephones reporting stations, etc.....	30,000 00	27,220 42	2,779 58
Telephones in connection aids to navigation.....	5,000 00	4,596 11	403 89
Lighthouse buoy steamer for the St. Lawrence.....	50,000 00	45,269 76	4,730 24
Repairs to Maritime road.....	1,000 00	1,000 00	.....
Lighthouse and buoy steamer to replace <i>Scott</i> .....	110,000 00	27,901 54	82,098 46
Allowance to widow and children of the late Albert Gates.....	4,500 00	4,500 00	.....
Pilotage plant at Victoria and Esquimalt.....	9,000 00	.....	9,000 00
	2,607,800 00	2,324,103 30	283,696 70
Scientific institutions--			
Meteorological service.....	200,400 00	199,134 11	1,265 89
Magnetic observatory.....	1,000 00	892 29	107 71
	201,400 00	200,026 40	1,373 60
Marine hospitals—			
Care of sick seamen and repairs to hospitals.....	65,000 00	54,578 55	10,421 45
Shipwrecked and distressed seamen.....	3,000 00	1,331 09	1,668 91
	68,000 00	55,909 64	12,090 36
Steamboat inspection—			
Steamboat inspection.....	70,000 00	63,714 12	6,285 88



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STATEMENT of Expenditure of the Department for the fiscal year 1913-14—Concluded.

Service.	Appropriation.	Expenditure.	Balance.
	\$ cts.	\$ cts.	\$ cts.
Fisheries—			
Salaries and disbursements of fishery officers.....	230,000 00	229,547 16	452 84
Building fishways and cleaning rivers.....	20,000 00	12,341 93	7,658 07
Legal and incidental expenses.....	4,000 00	1,100 87	2,899 13
Canadian Fisheries Museum.....	16,000 00	9,100 54	6,899 46
Oyster culture.....	6,000 00	4,434 60	1,565 40
Cold storage and transportation of fresh fish..	100,000 00	90,868 51	9,131 49
Dogfish reduction works.....	60,000 00	41,188 37	18,811 63
Services of Customs officers re Modus Vivendi licenses	900 00	537 90	362 10
Fisheries Intelligence Bureau.....	10,000 00	8,956 76	1,043 24
International Fishery Commission.....	5,000 00	441 59	4,558 41
Fisheries Patrol Service.....	137,500 00	135,330 87	2,169 13
10 Fishery patrol boats for Atlantic coast.....	50,000 00	15,994 08	34,005 92
Exhibit of fresh fish (Toronto exhibition) .....	10,000 00	9,700 48	299 52
Fisheries patrol steamer for lake Winnipeg.....	145,000 00	40,146 03	104,853 97
Fish breeding establishments.....	400,000 00	354,675 13	45,324 87
Marine biological stations and investigations .....	17,000 00	17,000 00	
Fishery patrol boats for British Columbia.....	75,000 00	66,542 10	8,457 90
Expenses of investigating claims for compensation under the Pelagic Sealing Treaty .....	17,000 00	16,713 02	286 98
Allowance to Department of Public Works for the loss of the icebreaking tug "Sir Hector".....	16,238 00	16,238 00	
	1,319,638 00	1,070,857 94	248,780 06
Civil government salaries.....	253,200 00	231,237 36	21,962 64
Contingencies.....	37,000 00	36,759 80	240 20
Recapitulation—			
Ocean and river service.....	1,271,766 86	1,216,278 06	55,488 80
Public works chargeable to capital.....	2,461,000 00	1,699,498 69	761,001 31
Lighthouse and coast service.....	2,607,800 00	2,324,103 30	283,696 70
Scientific institutions .....	201,400 00	200,026 40	1,373 60
Marine hospitals.....	68,000 00	55,909 64	12,090 36
Steamship inspection.....	70,000 00	63,714 12	6,285 88
Fisheries.....	1,319,638 00	1,070,857 94	248,780 06
Civil government salaries.....	253,200 00	231,237 36	21,962 64
Contingencies.....	37,000 00	36,759 80	240 20
	8,289,804 86	6,898,885 31	1,390,919 55
Fishing bounty.....	160,000 00	158,661 25	1,338 75



STATEMENT OF REVENUE of Marine and Fisheries Department for fiscal year ended  
March 31, 1914.

Service.	Amount.	Refunds.	Total.
	\$ cts.	\$ cts.	\$ cts.
Piers and wharfs.....	31,619 53	574 86	31,044 67
Harbours.....	762 00	5 00	757 00
DOMINION STEAMERS.			
Champlain.			
Freight, \$1,665.97 ; passengers, \$4,921.92 ; meals, \$50.30 ; miscellaneous, \$235.13.....	6,873 32		
Earl Grey.			
Freight, \$269.38 ; passengers, \$3,943.50 ; meals, \$222.60 ; berths. \$1,136 ; express, \$685.72 .....	14,257 20		
Minto.			
Freight, \$3,598.55 ; passengers, \$2,676.25 ; meals, \$170.90 ; berths, \$527 ; express, \$549.78 ..	7,522 48		28,653 00
Decayed pilots' fund. ....	5,697 41		5,697 41
Steamboat Inspection fund.....	3,556 15		3,556 05
Steamboat engineers' fees.....	1,865 00		1,865 10
Sick mariners' fund. ....	70,649 49	108 97	70,540 52
Signal station dues .....	751 00		751 00
Marine register fees ...	52 85		52 85
Fines and forfeitures (Marine) .....	331 62	10 90	320 72
Examination masters and mates.....	5,558 75	10 00	5,548 75
Casual revenue (Marine).....	74,649 58	6,461 52	68,188 06
Casual revenue (Fisheries) .....	29,435 87	497 71	28,938 16
Winter mail service.....	57 88		57 88
Fisheries revenue .....	99,959 21	269 30	99,689 91
Modus vivendi .....	11,728 50		11,728 50
	365,327 84	7,938 26	357,389 58
Transfer of fishery licenses issued by D. Morrison in 1914 and to come to account in 1914-15.....			423 78
			356,965 80



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## LIST OF WHARFINGERS.

DETAILED STATEMENT.

*Ontario.*

Locality.	Wharfinger.	Date of Appointment.	Remuneration allowed.	Amount.
		Year.	p. c.	\$ cts.
Barrys Bay .....	S. E. Smith .....	Aug. 25, 1905..	25	
Baysville .....	Jas. D. Smith .....	Sept. 25, 1906..	25	
Blind River .....	W. H. McGauley .....	April 14, 1908..	50	424 86
Bracebridge .....	W. C. Simmons .....	Sept. 24, 1908..	25	
Brighton .....	W. S. Strong .....	Mar. 7, 1913..	25	213 02
Bronte .....	T. Joyce .....	Dec. 17, 1912..	25	23 25
Bruce Mines .....	W. Fleming .....	April 15, 1902..	50	99 87
Burk's Falls .....	A. J. Collins .....	Feb. 8, 1807..	25	
Chute à Blondeau .....	O. Cousineau .....	ay 28, 1909..	40	85 43
Cockburn Island .....	D. J. McLeod .....	June 29, 1910..	50	18 23
Cooks Bay (see Silverwater).				
Depot Harbour .....	W. H. Hoppins .....	May 8, 1905..	25	
Echo Bay .....	T. H. McWaters .....	June 5, 1912..	25	
Goderich .....	Malcolm McDonald .....	Mar. 7, 1913..	25	131 25
Haileybury .....	E. Wright .....	July 26, 1913..	25	453 78
Hilton .....	Peter Brown .....	Mar. 25, 1912..	50	189 44
Honora .....	G. E. Hawke .....	May 12, 1909..	25	
Huntsville .....	Under lease .....			105 00
Kingsville .....	W. H. Black .....	Aug. 1, 1902..	25	289 47
Lakeport .....	Roy Mathews .....	July 4, 1912..	25	
L'Orignal .....	Louis Tourangeau .....	May 22, 1912..	25	54 84
Leamington .....	J. E. Johnson .....	May 11, 1906..	25	323 28
Lions Head .....	Chas. Knapp .....	Feb. 6, 1906..	25	
Maganatawan .....	Conrad Ross .....	April 6, 1910..	25	
Midland .....	J. Yates .....	Oct. 26, 1905..	25	433 15
Michipicoten Harbour .....	George Reed .....	Nov. 27, 1913..	25	
Morpeth .....				
North Bay .....	Michael LeBœuf .....	Mar. 21, 1910..	50	55 02
Oshawa .....	W. T. Henry .....	Aug. 10, 1904..	\$400	
Owen Sound .....	Under lease .....			
Pelee Island .....	H. Henderson .....	Feb. 2, 1907..	25	441 80
Pembroke .....	Thos. Lowe .....	Mar. 7, 1913..	\$200	114 80
Peterboro, Wolfe St. ....				
Port Finlay .....	J. H. Teare .....	June 29, 1908..	50	
Port Rowan .....	Jos. Ellis .....	June 8, 1910..	25	
Port Whitby .....	John Watson .....	Sept. 30, 1912..	25	119 55
Providence Bay .....				
Richards Landing .....	Jas. Buruside .....	Mar. 16, 1912..	50	129 09
Rondeau .....	Jas. Claus .....	Nov. 27, 1913..	25	26 00
Rosspport .....				
Rosseau .....	S. A. Foote .....	April 17, 1912..	50	134 34
Sault Ste. Marie .....	G. A. Boyd .....	April 9, 1897..	\$100 per month 200 " year for assistant ..	111 97
Scudder wharf—Pele Island ..	Irwin Quick .....	May 5, 1911..	25	161 64
Sheguiandah .....	Wm. Stevens .....	Nov. 8, 1910..	25	37 90
Silver Centre .....	H. Pickering .....	July 17, 1911..	...	25 00
Silver Water .....	Chas. Kent .....	May 28, 1909..	50	
Southampton .....	H. Harmer .....	May 24, 1912..	25	165 25
South Lancaster .....	John Munroe .....	Sept. 19, 1912..	25	
Summerstown .....	A. Bonnerville .....	May 25, 1910..	25	
Tendy Bay .....	Philip Jacob .....	May 22, 1912..	22	
Thessalon .....	W. H. Hill .....	Feb. 29, 1912..	50	81 47
Tolsinaville (see Cockburn Isl'd).				
Treadwell .....	H. Deschesne .....	April 24, 1914..	50	58 72
Wendover .....	M. St. Pierre .....	Feb. 20, 1913..	50	65 18
Warton .....	E. Shackleton .....	— 12, 1913..	25	61 50
				4,634 11



LIST OF WHARFINGERS—Continued.

DETAILED STATEMENT—Continued.

Quebec-Montreal District.

Locality.	Wharfinger.	Date of Appointment.	Remuneration Allowed.	Amount.
		Year.	p.c.	\$ cts.
Agnes.....	L. A. Roy.....	Nov. 27, 1891..	25	
Boucherville.....	Nap. Sicotte.....	April 17, 1913..	25	
Cap de la Madeleine.....				1 65
Cascades.....				
Cedars.....	C. Laboursadière.....	May 27, 1907..	50	
Côteau du Lac.....	A. St. Amour.....	July 4, 1912..	50	4 20
Coteau Landing.....	Nap. Beriault.....	June 29, 1910..	50	20 95
Desjardins.....	P. Desjardins.....	Mar. 31, 1906..	25	
East Templeton.....	Léon Campeau.....	May 13, 1912..	50	32 09
Fassett, Labelle Co.....	F. Thomas.....	April 28, 1914..	50	57 36
Graham.....	Antoine Bertrand.....	Feb. 22, 1911..	50	42 19
Greece Point.....	T. Ranger.....	July 16, 1902..	25	
Hudson.....	Cyprien Bertrand.....	June 25, 1912..	50	61 42
Ile Perrot, North.....	O. Legault.....	May 30, 1910..	25	74 75
" South.....	R. Daoust, (acting).....	Aug. 8, 1908..	50	
Knowltons Landing.....	L. Knowlton.....	Mar. 23, 1910..	25	37 50
Lacolle.....	R. J. Robinson.....	Mar. 8, 1894..	25	
Lake Megantic (see Megantic Village).				
Longueuil (under Montreal Harbour Commissioners).				
Magog.....	D. Peters.....	June 10, 1906..	50	71 29
Masson.....	O. Daoust.....	May 2, 1913..	\$100	
Megantic Village.....				
Monte Bello.....	A. Gauthier.....	April 17, 1914..	50	30 00
Papineauville.....	A. Chabot.....	April 10, 1912..	50	124 66
Peel Head Bay.....	A. N. Roy.....	Jan. 8, 1907..	25	6 45
Pointe Fortune.....	Wm. Brown.....	April 26, 1910..	25	133 10
Pointe aux Trembles.....				
Pointe à Valois (see Valois Point).				
Port Lewis.....	Sam Carson.....	Dec. 17, 1912..	25	
Rigaud.....	O. Mallette.....	Oct. 14, 1907..	50% except that from tolls and dues from use of scales.....	60 69
Rigaud.....	J. Vallée, assistant wharfinger.....	May 5, 1908..	50% of tolls and dues collected from use of scale.	
Sabrevois.....	Vacant.....			
St. Agnes, see Agnes.				
St. Anicet.....	Moise Côté.....	Aug. 30, 1913..	50	
Ste Anne de Bellevue.....	M. C. Bezner.....	Sept. 21, 1908..	50	182 77
St. Denis.....				12 33
St. Marc, Verchères.....	Vacant.....			
St. Zotique.....	A. Bissonnette.....	Sept. 7, 1906..	25	9 20
Varennas.....				
Valois Point.....	L. Castonguay.....	Aug. 20, 1897	25	27 82
Vaudreuil.....	O. Boileau.....	Sept. 14, 1914..	50	77 28
Verchères.....	A. St. Pierre.....	Sept. 6, 1912..	25	Nil.
Ville Marie.....	J. J. Maillard.....	Aug. 2, 1899..	25	
				1,067 70



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LIST OF WHARFINGERS—*Continued.*DETAILED STATEMENT—*Continued.**Quebec District.*

Locality.	Wharfinger.	Date of Appointment.	Remuneration Allowed.	Amount.
		Year.	p. c.	\$ cts.
Amherst (Magdalen Island).....	J. Chas. Boudreau.....	Sept. 1, 1913..	25	271 86
Anse aux Gascons.....	S. A. Huard.....	Sept. 5, 1913..	25	31 44
Anse à l'Islet.....	Jos. Duguay.....	Sept. 17, 1912..	25	151 83
Anse St. Jean.....	F. Lavoie.....	Aug. 13, 1895..	\$19.00	73 17
Baie St. Paul.....	P. Cimon.....	Sept. 27, 1912..	32.00	102 11
Beauport.....	F. Guillot.....	Sept. 25, 1912..	50	73 46
Berthier.....	J. Blais.....	Sept. 7, 1905..	50	70 90
Bic.....	L. Roy.....	Sept. 16, 1912..	25	
Carleton.....	E. Alain.....	Sept. 6, 1913..	\$50.00	32 95
Cap à l'Aigle.....	F. Charrette.....	Sept. 27, 1912..	18.00	62 97
Château Richer.....	Nérée Paré.....	Sept. 13, 1912..	25	82 12
Chicoutimi.....	T. Tremblay.....	Sept. 23, 1901..	\$122.00	1,235 47
Esquimaux Point.				
Grand Entry.....	T. Rankin.....	June 26, 1912..	25	88 47
Grand Pabos (see Anse à l'Islet).				
Grand River.....	Geo. Belliveau.....	April 27, 1912..	25	136 69
Grindstone (Magdalen Island)...	André Gaudet.....	April 18, 1914..	25	430 23
Ile aux Grues.....	D. Vézina.....	June 13, 1904..	25	
Les Eboulements.....	H. Tremblay.....	Mar. 7, 1914..	\$29.00	95 82
L'Islet.				
Matane.....	Alex. J. Pelletier.....	Jan. 20, 1912..	50	137 28
Mechins.....	G. E. Verreault.....	Feb. 14, 1913..	50	47 71
Miguasha.....				
Montmagny Basin.....	R. Fournier.....	May 23, 1913..	25	
Murray Bay.....	Wm. Tremblay.....	Mar. 14, 1913..	None.	653 63
New Carlisle.....	John C. Hall.....	April 25, 1912..	25	77 34
Paspebiac.....	J. DeCaen.....	Feb. 22, 1908..	50	39 11
Percé.....	J. M. LeBoutillier.....	April 17, 1912..	40	191 42
Pointe à Côté (see Bic).....				
Point aux Esquimaux.....				
Pointe aux Origneaux (see Rivière Ouelle).				
Port Daniel.....	F. X. Gagnon.....	Feb. 26, 1907..	\$50.00	20 05
Roberval.....	Simon Martel.....	June 9, 1914..	50	287 61
Rimouski.....	U. Lavoie.....	Mar. 27, 1907..	50	79 84
Rivière Blanche.....	Alphonse Quimper.....	Jan. 20, 1912..	50	86 90
Rivière du Loup.....	L. J. Puize.....	Nov. 7, 1905..	\$146.00	648 82
Rivière Ouelle.....	J. A. Gamache (acting)...	June 23, 1913..	25	55 95
St. Alphonse de Bagotville.....	Thos. Fortier.....	April 20, 1909..	\$48.00	215 24
Ste. Cécile du Bic.....	O. LeBel.....	Jan. 20, 1912..	25	33 00
St. Irénée.....	G. Bouchard.....	Feb. 10, 1903..	25	124 88
St. Jean d'Orléans.....	Vacant.....		50	60 00
St. Jean Port Joli.....	Lucien Legros.....	Jan. 16, 1913..	25	
St. Laurent d'Orléans.....	J. Godbout.....	May 11, 1904..	50	30 00
St. Nicholas.....	Under lease.....			50 00
St. Siméon.....	E. Tremblay.....	Mar. 7, 1913..	25	29 56
St. Thomas de Montmagny.....	R. Fournier.....	May 23, 1913..	25	72 69
Shea Point (see Amherst, Magdalen Islands).				
Tadousac.....	A. Gingras.....	May 29, 1906..	\$30.00	64 48
Trois Pistoles.....				
				6,045 00



LIST OF WHARFINGERS—Continued.

DETAILED STATEMENT—Continued.

New Brunswick.

Locality.	Wharfinger.	Date of Appointment.	Remuneration allowed.	Amount.
		Year.	p.c.	\$ cts.
Andersons Hollow.....	I. H. Copp.....	Jan. 25, 1913..	25	120 60
Black River.....	A. L. Moore.....	Jan. 23, 1914..	25	
Bathurst.....	J. C. Meahan.....	June 15, 1912..	25	67 77
Buctouche.....	J. J. LeBlanc.....	May 2, 1912..	25	
Burnt Church.....	Jas. Anderson.....	Feb. 26, 1904..	25	
Campbellton.....	W. W. Doherty.....	Oct. 19, 1912..	25	1,524 06
Cape Tormentine.....	J. D. Lane.....	May 24, 1912..	25	424 25
Caraget.....	H. Foulen.....	June 26, 1912..	25	67 02
Clifton.....				
Clifton, now Stonehaven.				
Cocagne.....	J. F. Bourque.....	Mar. 13, 1907..	25	
Coles Point.....	J. B. Tower.....	June 21, 1909..	25	
Dalhousie.....	W. J. Smith.....	June 27, 1891..	25	22 50
Edgett Landing.....	Moses Stevens.....	Mar. 27, 1912..	25	
Gardners Creek.....	J. J. Armstrong.....	Dec. 22, 1909..	25	
Hopewell Cape.....	L. Layton.....	Mar. 25, 1912..	25	55 38
Hopewell Hill.....	F. J. Robinson.....	July 17, 1909..	25	
Kingston see Rexton.				
Lameque.....	N. Chiasson.....	Nov. 28, 1906..	25	
Lorneville.....	Vacant.....			
Little Aldouane.....	J. Comeau.....	Mar. 21, 1911..	25	
Main River.....	A. S. Murray.....	Mar. 1, 1906..	25	
Miscou Harbour.....	Prudent Roy.....	Nov. 9, 1910..	25	
Moncton.....	Jas. Flanagan.....	June 16, 1911..	25	97 22
Neguac.....	C. McIntosh.....	Apr. 18, 1910..	25	
New Horton, see Two Rivers.				
Oromocto.....	Jno. E. Stocker.....	June 30, 1905..	25	
Partridge Island, East wharf.				
Petit Rocher.....	J. Boudreau.....	Aug. 27, 1910..	25	1 01
Quaco, see St. Martin.				
Rexton.....	T. Harnett.....	Aug. 3, 1911..	25	
Sand Point.....	E. C. Elkin.....	Nov. 6, 1910..	25 not to exceed \$1,500 in one year.....	8,933 43
Spencer Island.....	H. E. Grant.....	June 24, 1911..	25	
St. John, see Sand Point.				
St. John West, see Sand Point.				
Shippigan.....	G. J. Henry.....	Apr. 6, 1910..	50	71 99
St. Louis Gully.....				
St. Martin.....	A. Vaughan.....	Nov. 5, 1912..	25	10 26
St. Mary.....	H. M. Leger.....	Dec. 19, 1905..	25	
St. Nicholas River.....	J. Grant.....	Sept. 27, 1901..	25	
Stonehaven.....	S. Payne.....	Nov. 9, 1914..	25	
Tracadie.....	L. Breau.....	Oct. 12, 1910..	25	6 46
Two Rivers.....	J. Knowlton.....	May 27, 1913..	25	4 80
Waterside, see Anderson's hollow				
				11,406 75

Nova Scotia.

Advocate.....	Vacant.			
Annapolis Royal.....	R. P. Saunders.....	Oct. 8, 1913..	25	25 87
Arisaig.....	H. R. McAdam.....	Dec. 30, 1898..	25	
Arichat.....	D. H. Cutler.....	Mar. 21, 1912..	25	43 14
Avonport.....	L. F. Fuller.....	Aug. 13, 1902..	25	
Babins Cove.....	S. Vigneau.....	Jan. 20, 1914..	25	1 90
Baddeck.....	A. S. McDonald.....	Nov. 25, 1912..	25	257 19



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LIST OF WHARFINGERS—*Continued.*DETAILED STATEMENT—*Continued.*Nova Scotia—*Continued.*

Locality.	Wharfinger.	Date of Appointment.	Remuneration Allowed.	Amount.
		Year.	p.c.	\$ cts.
Bakers Point.....	Vacant.			
Barrington Passage.....	J. H. Christie .....	Aug. 31, 1896..	25	58 79
Barrington Head.....	Capt. W. Doane .....	June 29, 1910..	25	4 87
Bass River .....	J. C. Fulton.....	Jan. 6, 1898..	25	
Bayfield.....	Geo. Prowse .....	" 20, 1914..	25	
Battery Point.....	Albert Ellis .....	Apr. 3, 1912..	50	15 17
Bear Point.....	C. O. Venot .....	Oct. 29, 1912..	25	
Bear River.....	A. W. Dunn.....	Sept. 12, 1913..	25	0 37
Belliveau Cove.....	S. C. Therriault.....	Nov. 24, 1892..	25	
Black Point.....	Elisha W. Perry.....	Apr. 30, 1913..	25	92 00
Boularderie.....			25	13 53
Broad Cove.....				
Broad Cove Marsh .....	H. McDonald.....	Oct. 19, 1892..	25	
Brooklyn .....	G. McLeod.....	Mar. 30, 1914..	25	25 09
Brule Point.....	A. Craig.....	Dec. 26, 1898..	25	
Burlington.....				
Canada Creek.....	H. Dickey.....	Aug. 12, 1899..	25	5 49
Canning.....	F. A. McBride.....	Nov. 16, 1912..	25	
Chebogue (see Town Point).				
Canso.....	Jas. Meagher.....	Dec. 13, 1905..	25	
Cape Cove.....	Benj. Doucette .....	Feb. 8, 1907..	25	29 18
Castle Bay .....	R. H. McNeil .....	Mar. 14, 1914..	25	
Centreville.....	A. Ward.....	May 28, 1899..	25	82 58
Chipmans Brook.....	H. Thorpe .....	Apr. 11, 1907..	25	
Church Point.....	D. Thibodeau.....	June 2, 1913..	25	13 91
Clifton.....				
Clarks Harbour (Swims Point).	Job A. Crowell.....	Mar. 21, 1913..	25	42 95
Cranberry Head.....	A. Shaw.....	May 26, 1903..	25	
Cribbins Point.....	Angus R. Boyd.....	Oct. 2, 1895..	25	
Deep Brook.....	J. C. W. Ditmare.....	Dec. 2, 1911..	25	8 64
Delap Cove .....	R. W. McCaul.....	Nov. 28, 1889..	25	
D'Ecouse (New).....	A. Langlois .....	Aug. 26, 1912..	25	50 14
Digby .....	J. O. Dakin .....	Feb. 5, 1912..	25	2,980 78
Drumhead.....	Vacant.			
Eagle Head.....	N. Leslie.....	Jan. 9, 1889..	25	
East Bay.....	A. McGillivary.....	May 3, 1903..	50	
East Jeddore (see Bakers Point).				
East River.....	Vacant.			
Ecum Secum .....	"			
Englishtown.....				
Freeport .....	J. L. Stevens.....	May 8, 1912..	25	74 31
Gabarus.....	Vacant.			
Grand Narrows.....				
Grandville Centre.....	H. Roney.....	July 6, 1903..	25	55 06
Great Village.....	Vacant.			
Halifax (In dockyards).				
Hall Harbour.....	J. C. Watson.....	Nov. 16, 1912..	50	42 98
Hampton .....	C. E. Dunn.....	Dec. 22, 1906..	25	19 53
Hantsport.....				
Harbourville .....	Wm. Spicer .....	May 21, 1913..	25	50 31
Horton Landing.....	F. G. Curry.....	Apr. 30, 1898..	25	55 02
Indian Bay (see Jordan Bay).				
Indian Harbour.....				
Iona .....	F. S. X. McNeill.....	June 8, 1901..	25	
Irish Cove.....				
Isaacs Harbour.....	T. D. Cooke.....	Jan. 30, 1902..	25	10 02
Jordan Bay.....	W. McKay.....	July 1, 1913..	25	11 96
Jordan River.....	Vacant.			
Kelley Cove.....	J. A. Kelly.....	Apr. 6, 1908..	25	
Kingsport (see Oak Point).				
Little Narrows.....	Vacant.			
Lismore.....	"			



LIST OF WHARFINGERS—Continued.

DETAILED STATEMENT—Continued.

Nova Scotia—Continued.

Locality.	Wharfinger.	Date of Appointment.	Remuneration Allowed.	Amount.
Nova Scotia—Con.		Year.	p.c.	\$ cts.
Little River.....	O. E. Denton.....	Feb. 5, 1912..	25	37 58
Maitland .....				
Margaretsville.....	Wm. Early. ....	Jan. 15, 1912..	25	68 74
Meteghan Cove . . . . .	M. R. Robichaud.....	Feb. 7, 1909..	25	12 77
Meteghan River . . . . .	A. Melanson.....	Sept. 26, 1910..	25	
Middle Country Harbour.....				
Militia Point.....	D. McIntosh .....	Aug. 20, 1892..	25	
Mill Creek.....	Jas. E. Porter .....	Jan. 31, 1914..	25	
Monday Point.....				
Morden . . . . .	Wm. Findlay.....	Jan. 14, 1914..	25	16 62
New Edinburgh.....	Chas. T. D'Eon.....	Apr. 3, 1912..	25	
Newellton. ....	A. C. Newell.....	" 23, 1906..	25	50 20
Noel . . . . .	M. Faulkner.....	Nov. 7, 1905..	25	
North Wallace.....				
North Side (see Boularderie).				
Oak Point.....	Leased.....			33 34
Ogilvie.....	J. L. Swindle.....	Mar. 4, 1907..	25	
Owls Head Harbour .....	David Palmer, jr. ....	Apr. 13, 1910..	25	
Parkers Cove.....	Daniel Robinson .....	Dec. 13, 1913..	25	
Parrsboro'.....	Wm. Lavers.....	June 8, 1911..	50	
Phinney Cove.....	A. Bent.....	Dec. 24, 1907..	25	1 50
Picketts.....	F. A. Eaton.....	Aug. 2, 1899..	25	73 49
Pictou Island.....				
Plymouth .....	J. B. Purdy .....	Feb. 22, 1902..	25	
Plympton.....	W. K. Smith.....	Aug. 8, 1890 ..	25	7 69
Port Dufferin.....	E. H. Balcom .....	May 5, 1910..	25	
Port George.....				34 93
Port Greville .....	Vacant.			
Port Hastings.....	Gordon Martin .....	April 17, 1914..	25	44 47
Port Hawkesbury.....	F. McInnis.....	Mar. 20, 1907..	25	395 33
Port Hood .....	I. P. Smith.....	Dec. 20, 1912..	25	
Port Joli.....	J. S. McAdam.....	Feb. 5, 1900..	25	
Port la 'Tour.....	E. R. Reynolds (Temporary).....	May 23, 1914..	25	15 05
Port Lorne.....	F. Beardsley.....	June 9, 1897..	25	26 59
Port Maitland .....	J. W. Raymond .....	Feb. 20, 1914..	25	
Port Morien.....	Wm. A. Brunn.....	Oct. 2, 1912..	25	66 23
Port Mouton.. . . . .	I. Leslie.....	Oct. 17, 1912..	25	2 27
Port Philip.....	Chandler Smith.....	Jan. 17, 1913..	25	3 19
Port Wade.....	E. H. Johns .....	April 3, 1912..	25	38 09
Poulamon.....	Chas. N. Pertus.....	Nov. 18, 1911..	25	44 61
Rays Creek.....	A. E. Goodwin .....	April 3, 1912..	25	5 02
Riverside .....	Vacant.			
Salmon River .....	J. E. LeBlanc.....	Nov. 25, 1913 ..	25	
" (see Port Dufferin).				
Sandford (see Cranberry Head).				
Saulnierville. ....	J. L. Saulnier .....	Aug. 25, 1888..	25	
Scotch Cove.....	Geo. Fitzgerald .....	Dec. 13, 1912..	50	15 56
Shag Harbour.....	Jas. W. Smith.....	Dec. 13, 1912..	25	1 20
Sheet Harbour (see East River and West River.				
Short Beach.....	A. E. Wyman .....	Feb. 11, 1909..	25	
Spencers Island.....	H. E. Grant .....	June 24, 1911..	25	14 10
Swims Pt. . . . .	J. A. Crowell.....	Mar. 21, 1913..	25	
Tancook Island.....	W. D. Pearl.....	Mar. 9, 1912..	25	
Tenny Cape.....				
Tidnish . . . . .	R. A. Smith.....	Sept. 27, 1901..	25	59 52
Tiverton .....	B. Blackford.....	Oct. 17, 1906..	25	
Trion Pt. ....	J. A. Haley .....	Aug. 16, 1901..	25	
Tracadie .....	Breakwater only.			



SESSIONAL PAPER No. 21

LIST OF WHARFINGERS—Continued.

DETAILED STATEMENT—Continued.

Nova Scotia—Concluded.

Locality.	Wharfinger.	Date of Appointment.	Remuneration Allowed.	Amount.
<i>Prince Edward Island.</i>		Year.	p. c.	\$ cts.
Tusket Wedge.				
Victoria .....	D. Ogilvie.....	Aug. 13, 1911..	25	
Wallace, S. side.....	Vacant.			
Walton.				
Washabuck Centre .....	John McNeil. ....	April 20, 1910..	25	
West Arichat.....	Vacant.....		25	12 04
West Head.....	H. N. Newell.....	Feb. 7, 1910..	25	51 30
Westport.....	W. E. Kent.....	Sept. 16, 1912..	25	61 67
West Pubnico.....	A. D'Eon.....	Feb. 20, 1914..	25	
West River.....	Vacant.			
White Head .....	E. L. Munroe.....	Oct. 23, 1906..	25	
White Point .....	See Scotch Cove.			
White Pt.....	E. West.....	Jan. 9, 1889..	25	
Whitewaters .....	H. S. Winter. ....	April 22, 1913..	25	5 10
Whycocomagh .....	D. Livingstone.....	Dec. 22, 1906..	25	
Wolfeville .....	J. L. Franklin.....	Oct. 22, 1901..	25	28 29
Wreck Cove.				
				5,297 27

Prince Edward Island.

Aitkens Ferry.....	J. M. Howitt .....	April 3, 1912..	25	
Aitkens Shore Pier .....	See Lower Montague.			
Annandale .....	Isaac Howlett .....	Aug. 26, 1912..	25	81 48
Bay View.....	J. Harrington .....	Oct. 2, 1885..	25	9 65
Belfast.....	J. F. Halliday.....	May 1, 1901..	25	57 44
Brush Wharf.....	Levi R. Ings.....	June 9, 1914..	25	32 32
Campbell's Cove.				
Chapel Point .....	R. H. McCormack. ....	July 19, 1912..	25	6 45
Charlottetown.....	Agency.....			1,317 86
China Point.....	W. S. N. Crane.....	Sept. 18, 1885..	25	7 31
Clifton.....	J. Gunn .....	May 4, 1900..	25	
Cranberry.				
Crapaud .....	Jas. Day .....	Sept. 30, 1912..	25	213 60
Egmont Bay .....	N. Gallant.....	Nov. 9, 1891..	25	
Gaspereau.....	See St. Mary's Bay.			
Georgetown .....	R. R. Jenkins .....	Oct. 14, 1892..	25	35 52
Grand River South .....	Wm. A. Grossman .....	Jan. 14, 1914..	25	
Grand River .....	See Annandale.			
Greek River.....	Wm. Butler .....	April 24, 1911..	25	15 85
Haggerty's .....	John Callaghan.....	June 25, 1912..	25	28 08
Hickey's .....	Patrick McGuirk .....	April 2, 1914..	25	33 30
Higgins' Shore .....	H. Reeves .....	May 16, 1913..	25	
Hurd Point .....	Robt. M. Holland.....	May 21, 1913..	25	52 95
Kier Shore .....	W. Hodgson.....	June 10, 1895..	25	139 85
Lambert Pier .....	W. A. Johnston .....	May 3, 1900..	25	68 33
Lewis Point.....	H. McCormack.....	Nov. 6, 1908..	25	
Lower Montague .....	See Aitkins Ferry.			
Mink River.....	See Murray Harbour Nth.			
Montague .....	See with Lambert's Pier.			
Mount Stewart.....	B. Pigott.....	Jan. 17, 1910..	25	62 58
McGee Pier Shore.....	See Egmont Bay.			
McKee Pier.....	See Egmont Bay.			
McPherson Cove .....	Jos. Christian.....	April 18, 1914..	25	11 25
Murray Harbour (North). .....	Benj. Richards .....	Jan. 19, 1909..	25	1 20
" (South).....	G. Billard.....	June 14, 1913..	25	22 88
Nine Mile Creek.....	Chas. McDonald.....	Mar. 14, 1914..	25	



LIST OF WHARFINGERS—Continued.

DETAILED STATEMENT—Continued.

Prince Edward Island—Concluded.

Locality.	Wharfinger.	Date of Appointment.		Remuneration Allowed.	Amount.
		Year.		p.c.	\$ cts.
North Cardigan . . . . .	H. McDonald . . . . .	May	23, 1914..	25	44 03
Oyster Bed Bridge . . . . .	H. Gallant . . . . .	May	22, 1912..	25	
Pinette . . . . .	A. Young . . . . .	Nov.	28, 1906..	25	
Port Selkirk, see Brush Wharf.					
Pownal . . . . .	M. M. Hayley . . . . .	Oct.	13, 1896..	25	24 98
Red Point . . . . .	Alex. McAuley . . . . .	May	24, 1912..	25	
St. Mary's Bay . . . . .	G. H. Hicken . . . . .	Nov.	11, 1910..	25	21 90
St. Stephen's Pier . . . . .	See with Lambert Pier.				
Souris.					
South Rustico Pier . . . . .	See Oyster Bed Bridge.				
South River.					
Stephens . . . . .	See Lambert Pier.				
Sturgeon Pier . . . . .	Win. Griffin . . . . .	Nov.	9, 1912..	25	14 06
Tignish . . . . .	Jos. E. Richard . . . . .	Sept.	16, 1912..	25	11 79
Vernon River . . . . .	John Finlay . . . . .	April	25, 1912..	25	95 72
Victoria Pier . . . . .	See with Crapaud.				
West Point.					
Wood Island . . . . .	J. Young . . . . .	April	10, 1899..	25	13 74
					2,424 12

Manitoba.

Selkirk . . . . .	J. A. Hunt . . . . .	May	3, 1912..	25	636 04
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British Columbia.

Ladysmith . . . . .	D. T. Conway . . . . .	Feb.	6, 1906..	25	
Langley.					
Sidney Harbour . . . . .	C. C. Cochrane . . . . .	Nov.	25, 1910..	25	49 14
Stewart . . . . .					62 20
Massett, B.C. . . . .	Vacant.				
					111 34

Résumé Wharfage.

Ontario . . . . .	\$ 4,634 11
Montreal District . . . . .	1,065 40
Quebec District . . . . .	6,044 50
New Brunswick . . . . .	11,406 75
Nova Scotia . . . . .	5,297 27
Prince Edward Island . . . . .	2,424 12
Manitoba . . . . .	636 04
British Columbia . . . . .	111 34
	\$31,619 53

Harbour Dues.

Revenue from—	
Port Stanley . . . . .	\$ 5 00
St. Johns . . . . .	59 00
Sorel . . . . .	245 50
Halifax . . . . .	22 50
Louisburg . . . . .	220 00
International Pier Sydney . . . . .	50 50
Comox . . . . .	102 50
Victoria . . . . .	57 00
	\$762 00



SESSIONAL PAPER No. 21

## LIST OF HARBOUR MASTERS.

*Ontario.*

Port.	Harbour Master.	Date of Appointment.	Gross Collections.	Remuneration.	Net Collections.
				\$	\$ cts.
Amherstburg.....	Geo Gott.....	May 13, 1912..	.....	200 00	
Bronte.....	Thos. Joyce.....	Dec. 17, 1912..	2 00	200 00	
Bying Inlet North..	H. L. Grasswell..	Feb. 20, 1912..	.....	200 00	
Collingwood.....	Robt. Hughes.....	Nov. 25, 1913..	24 50	300 00	
Depot Harbour.....	A. F. Butterworth..	April 14, 1913..	20 00	200 00	
Fort William.....	Jas. McAllister.....	Feb. 22, 1913..	265 00	600 00	
French River.....	C. Dean Dudy.....	Mar. 25, 1912..	2 00	200 00	
Goderich.....	M. McDonald.....	April 17, 1912..	25 00	300 00	
Little Current.....	W. D. Ritchie.....	" 3, 1912..	188 50	200 00	
Meaford.....	Wm. Cooke.....	July 1, 1913..	.....	200 00	
Midland.....	Wm. McClinchey..	Aug. 16, 1913..	.....	300 00	
Owen Sound.....	W. H. Smith.....	April 25, 1912..	40 00	200 00	
Oshawa.....	W. T. Henry.....	Aug. 10, 1904..	.....	300 00	
Parry Sound.....	C. A. Thomson.....	June 2, 1914..	.....	200 00	
Penetanguishene..	Peter Light.....	May 7, 1906..	14 50	200 00	
Port Arthur.....	B. Guerard.....	" 21, 1897..	169 00	300 00	
Port McNicoll..	See Victoria harbour.				
Port Stanley.....	F. R. Dale.....	Aug. 13, 1912..	.....	200 00	
Rondeau.....	J. Claus.....	Nov. 27, 1913..	11 00	100 00	
Sault Ste. Marie..	S. L. Penhorwood..	May 2, 1912..	.....	300 00	
Southampton.....	W. H. Johnston.....	Oct. —, 1882..	15 00	100 00	
Sarnia.....	R. McAdam.....	May 3, 1886..	.....	300 00	
Trenton.....	Jos. Coutts.....	" 13, 1912..	.....	200 00	
Victoria.....	Thos. Nottingham..	" 1, 1911..	41 00	200 00	
Whitby.....	J. Watson, jr.....	June 7, 1912..	23 50	200 00	

*Quebec.*

Amherst.....	John Cassidy.....	Sept. 2, 1878..	10 00	200 00	
Anse-aux-Gascons ..	John Maurant.....	June 28, 1905..	.....	100 00	
Bersimis.....	D. Thibault.....	Dec. 13, 1905..	.....	200 00	
Bic.....	F. Bellavance.....	April 25, 1912..	.....	200 00	
Bonaventure.....	F. Arsenault.....	April 24, 1913..	.....	100 00	
Carleton.....	Emile Alain.....	July 11, 1913..	.....	200 00	
Cape Cove.....	R. J. Lenfesty.....	June 7, 1912..	.....	200 00	
Caplin River.....	T. Bourdages.....	April 20, 1907..	.....	100 00	
Chicoutimi.....	A. Sturton.....	June 8, 1886..	.....	200 00	
Escoumains.....	Vacant.....				
Grand Entry.....	Andre Cyr.....	July 10, 1907..	.....	200 00	
Grand River.....	Geo. Belliveau.....	April 25, 1912..	.....	100 00	
Gaspe.....	F. T. Eden.....	April 1, 1889..	.....	500 00	
House Harbour.....	Gregoire Lafrance....	Dec. 12, 1910..	33 00	200 00	
Lachine.....	Under Montreal Harb	our Commission.			
Maria.....	A. Cyr.....	Mar. 29, 1905..	5 00	100 00	
Matane.....	J. Levesque.....	Jan. 20, 1912..	.....	200 00	
Malbaie.....	J. Thompson.....	May 27, 1913..	30 00	500 00	
Metis.....	J. H. Ferguson.....	Mar. 10, 1896..	.....	200 00	
New Carlisle.....	J. Chisholm.....	April 22, 1902..	.....	100 00	
New Richmond.....	F. X. Cormier.....	April 15, 1902..	32 00	200 00	
Nouvelle.....	J. Casey.....	Jan. 3, 1903..	13 00	200 00	
Oak Bay.....	T. Harper, Sr.....	July 12, 1904..	45 00	200 00	
Paspebiac.....	W. L. Kempffer.....	Sept. 2, 1900..	25 00	150 00	
Perce.....	E. Donoghue.....	Oct. 10, 1903..	12 00	100 00	
Port Daniel.....	B. Langlois.....	Feb. 21, 1907..	5 00	200 00	
Rimouski.....	A. P. St. Laurent..	May 31, 1896..	42 00	200 00	
Rivière du Loup..	F. E. Gilbert.....	Oct. 5, 1902..	12 00	100 00	
St. Godfroy.....	J. Grenier.....	June 5, 1905..	.....	100 00	
Montmagny.....	R. Fournier.....	May 23, 1913..	6 00	200 00	
St. Johns.....	G. H. Farrer.....	Mar. 20, 1897..	659 00	600 00	59 00
Sault au Mouton..	Vacant.....		.....	200 00	
Sorel.....	Pierre Lavallee.....	Feb. 5, 1912..	745 50	500 00	245 50
Trois Pistoles.....	O. Drapeau.....	Nov. 25, 1911..	.....	100 00	
Tadousac.....	A. Gingras.....	June 6, 1906..	.....	200 00	



LIST OF HARBOUR MASTERS—Continued.

New Brunswick.

Port.	Harbour Master.	Date of Appointment.	Gross Collections.	Remuneration.	Net Collections.
			\$ cts.	\$ cts.	\$ cts.
Alma. ....	G. W. Parsons.....	May 2, 1898..	55 00	100 00	
Back Bay.....	See Letete				
Baie Verte.....	See Port Elgin				
Bathurst.....	M. T. Daly.....	April 15, 1907..	29 00	200 00	
Blacks and Beaver H'b'r..	E. W. Cross.....	Sept. 17, 1883..		100 00	
Buctouche.....	H. Hutchinson..	April 17, 1897..		100 00	
Campbellton. ....	W. W. Doherty.....	Oct. 24, 1912..	156 50	200 00	
Campobello Island .....	H. Calder .....	April 25, 1912..		100 00	
Cape Bald .....	J. L. Cormier. ....	Aug. 19, 1911..		200 00	
Cape Tormentine .....	M. S. Treen .....	May 13, 1901..	35 00	200 00	
Caraquet.....	J. Lenteigne.....	June 11, 1913..	12 00	150 00	
Chatham.....	R. J. Walls .....	April 13, 1898..	198 50	300 00	
	C. Brown, Deputy Harbour Master ....	May 29, 1912..			
Cocagne ..	J. T. Bourque ...	June 23, 1905..		100 00	
Dalhousie .	W. S. Smith.....	Mar. 19, 1888..	139 50	200 00	
Dorchester... ..	Jas. Shea.....	Oct. 25, 1900..	27 50	200 00	
Fairhaven .....	A. Calder.....	July 30, 1901..	5 00	200 00	
Fredericton .....	Vacant.				
Grand Harbour.....	T. Ingalls, Sr.....	April 19, 1907..	2 50	100 00	
Northern Grand Manan..	J. E. Gaskell. ....	Mar. 20, 1907..		100 00	
Gull Rock Channel .....	G. A. Johnson.....	Mar. 27, 1904..		100 00	
Harvey .....	W. Wood.....	June 9, 1903..	34 50	100 00	
Heron Channel.....	G. N. Taylor .....	Nov. 25, 1911..	15 00	200 00	
Hillsborough.....	Jas. T. Gallagher.....	June 26, 1912..	45 00	100 00	
Hopewell Cape.....	J. H. Christopher.....	June 26, 1899..	1 50	200 00	
Ledge of St. Stephens....	T. Holmes .....	Dec. 17, 1913..		100 00	
L'Etang.....	See Letete				
Letete .....	H. W. Harris. ....	Feb. 16, 1906..		100 00	
Little Shippigan.....	Jos. Beaudin.....	Oct. 21, 1906..		100 00	
Moncton.....	E. P. Cook.....	July 4, 1912..		200 00	
Miscou Gully.....	See Little Shippigan.				
Musquash.....	J. McNulty. ....	Sept. 28, 1896..		100 00	
Newcastle.....	John Russell .....	June 27, 1904..		300 00	
North Head.....	See Northern Grand M				
Port Elgin .....	C. Trenholm.....	April 3, 1907..		200 00	
Pokemouche .....	M. Landry.....	May 13, 1901..		100 00	
Quaco .....	See St. Martin.				
Richibucto.....	J. A. Jardine.....	May 11, 1874..	24 50	200 00	
Sackville.....	Elijah Chase .....	May 11, 1904..	3 50	200 00	
Seal Cove.....	Wm. Russell.....	Feb. 22, 1913..	12 50	100 00	
St. Andrews .....	Wm. Clark .....	Dec. 23, 1911..	78 00	100 00	
St. George.....	Allan Stewart .....	April 3, 1912..	62 00	100 00	
St. Stephen .....	A. McWha .....	July 9, 1914..	29 00	100 00	
St. Martin and Quaco..	A. S. Vaughan.....	Nov. 1, 1912..	61 50	100 00	
Shediac .....	R. H. Welling.....	May 24, 1911..		300 00	
Great Shemogue.....	Vacant.				
Little Shemogue.....	Vacant.				
Shippigan.....	C. Gionet.....	June 25, 1912..	23 00	100 00	
Tracadie.....	M. Sonier .....	April 19, 1912..		100 00	
Waterside.....	I. H. Copp .....	Feb. 20, 1913..		100 00	
West Isles.....	B. Simpson.....	Sept. 27, 1901..		200 00	
Whitehead.....	A. H. Cheney .....	April 19, 1907..	3 00	100 00	

Nova Scotia.

Abbots Harbour. ....	F. U. D. Entremont ..	May 23, 1901..		200 00	
Advocate Harbour. ....	R. Dewis Atkinson. ..	May 2, 1913..	4 50	100 00	
Amherst.....	W. S. Tait.....	Sept. 30, 1912..	22 00	300 00	
Annapolis.....	J. Lindgren.....	July 7, 1898..	40 00	200 00	



SESSIONAL PAPER No. 21

LIST OF HARBOUR MASTERS—*Continued.*

## Nova Scotia—Continued

Port.	Harbour Master.	Date of Appointment.	Gross Collections.	Remuneration.	Net Collections.
			p.c.	\$	\$ cts.
Annapolis Royal.....	See Annapolis.				
Apple River.....	W. Green.....	May 24, 1911..	.....	200 00	
Arichat.....	Chas. V. Herbin ...	Nov. 27, 1913..	15 50	200 00	
Aspotogan.....	See Northwest Cove.				
Aspy Bay.....	See Bay St. Lawrence.				
Baddeck.....	F. L. McFarlane.....	Mar. 6, 1909..	.....	100 00	
Barrington.....	R. L. Penny.....	June 8, 1914..	17 00	200 00	
Bayfield.....	D. Sutton .....	Mar. 22, 1910..	1 50	200 00	
Bay Shore .....	See Port Lorne.				
Bay St. Lawrence .....	J. W. Fitzgerald.....	Dec. 22, 1910..	.....	200 00	
Bear River.....	Wm. McFadden.....	Sept. 27, 1897..	23 00	100 00	
Beaver Harbour.....	H. Hawbolt .....	Sept. 22, 1888..	15 00	100 00	
Belliveau Cove .....	F. LeBlanc.....	Dec. 6, 1912..	9 00	200 00	
Big Harbour.....	D. G. McKenzie .....	April 18, 1908..	.....	100 00	
Bourgeois.....	See River Bourgeois.				
Bridgewater.....	W. Oakes .....	Jan. 28, 1896..	173 50	200 00	
Big Bras d'Or.....	D. Carey .....	Feb. 12, 1912..	.....	200 00	
Big Pond.....	Vacant.				
Canning.....	F. A. McBride.....	Jan. 18, 1913..	.....	200 00	
Cape Breton Pier.....	See Glasgow.				
Cape Canso.....	Geo. Oliver.....	Feb. 14, 1905..	2 00	150 00	
Cape Negro.....	R. D. Perry.....	May 18, 1881..	5 50	200 00	
Chebogue .....	W. L. Jenkins .....	Sept. 28, 1912..	.....	200 00	
Chester.....	A. C. Corkum .....	July 8, 1896..	18 50	100 00	
Cheticamp.....	F. Aucoin .....	April 15, 1876..	.....	100 00	
Clark Harbour.....	J. G. Nickerson. ....	May 23, 1904..	32 50	200 00	
Clementsport .....	J. McCain.....	Oct. 18, 1898..	.....	150 00	
Country Harbour.....	See Isaac's Harbour.				
Cow Bay.....	See Port Morien.....				
County line to Grand Narrows.....	Vacant.				
Cranberry Pt.....	See Little Narrows.				
Descouse.....	A. Langlois .....	Dec. 23, 1911..	.....	100 00	
Digby.....	H. Anderson.....	June 19, 1902..	63 50	200 00	
East Bay.....	D. McGinnis (Ronald's son).....	April 5, 1886..	.....	100 00	
East Jeddore.....	See Jeddore.....				
Englishtown.....	See St. Anns.....				
Fourchu.....	A. B. Hooper.....	April 25, 1912 ..	.....	100 00	
Freeport .....	F. B. Prime .....	May 2, 1912..	.....	200 00	
French Village.....	See St. Margaret's Bay				
Fuches Cove.....	See St. Anns.				
Gabarus.....	Geo. Harris.....	Feb. 22, 1911..	.....	100 00	
Getsons Cove.....	See Lahave.				
Gillis Point East.....	See Little Bras d'Or Lake.				
Grand Narrows.....	See County line to Grand Narrows.				
Green Cove.....	See Port Maitland.				
Glace Bay.....	See Little Glace Bay.				
Glasgow and C.B. Pier, Sydney .....	A. McQuarrie.....	Oct. 30, 1880..	77 50	300 00	
Great Bras d'Or.....	See Big Harbour.				
Guysborough.....	T. O'Connor.....	April 2, 1913..	.....	100 00	
Halifax .....	F. G. Rudolf.....	May 13, 1910..	1,822 50	1,800 00	22 50
Halifax Harbour .....	J. C. Watson.....	Nov. 16, 1912 ..	.....	100 00	
Hantsport.....	Wm. McCulloch .....	Jan. 17, 1892..	47 50	300 00	
Hawkesbury.....	See Port Hawkesbury.				
Hubbards .....	N. C. McLean.....	Nov. 5, 1913..	.....	200 00	
Indian Bay.....	See Jordan Bay.				
Ingonish (North Bay).....	Angus McLean. ....	April 21, 1910..	10 00	200 00	
" (South Bay).....	J. C. Williams.....	Nov. 25, 1912..	9 00	100 00	



LIST OF HARBOUR MASTERS—Continued.

Nova Scotia—Continued.

Port.	Harbour Master.	Appointment.	Gross Collections.	Remuneration.	Net Collections.
			\$ cts.	\$ cts.	\$ cts.
Ingram River.....	E. Huntley.....	Jan. 19, 1907..	60 50	100 00	
International Pier, Sydney	M. J. Neville.....	Oct. 30, 1880..	350 50	300 00	50 50
Isaacs Harbour .....	T. D. Cook.....	June 19, 1900..	12 50	100 00	
Jeddore.....	J. F. Jennox.....	Aug. 5, 1912..	5 00	100 00	
Joggins Mines.....	A. Brine.....	Jan. 2, 1813..	22 50	200 00	
Jordan Bay .....	F. P. Thorburn.....	Mar. 11, 1901..	5 50	150 00	
Kelly Cove .....	Vacant.....			100 00	
LaHave.....	G. H. Zwicker.....	Feb. 25, 1875..	50 50	300 00	
L'Ardoise, Upper.....	Geo. Burke.....	Aug. 29, 1884..		100 00	
" Lower.....					
Larrys Road and River ..	See Torbay.				
Lingan .....					
Liscomb. ....	L. Wilson.....	Feb. 20, 1900..	9 00	200 00	
Little Bras d'Or Lake.....	V. McLean.....	Sept. 23, 1907..		100 00	
" " Harbour.....	J. M. LeBlanc.....	Oct. 9, 1909..	1 00	200 00	
Little Glace Bay. ....	E. D. Rigby.....	May 8, 1884..	22 50	200 00	
Little Narrows .....				100 00	
Liverpool.....	W. G. Hemeon.....	Jan. 3, 1912..	121 50	200 00	
Lockeport .....	G. J. Locke.....	April 21, 1906..		100 00	
Louisburg.....	R. D. Kerr .....	July 26, 1912..	420 00	200 00	220 00
Lower East Jeddore .....	J. Townsend, Sr., dep- uty harbour master..	May 1, 1899..		150 00	
	See Jeddore.				
Lower L'Ardoise .....	See L'Ardoise.				
Lower Port Latour .....	See Port Latour.				
Lunenburg.....	J. B. Heckman.....	Oct. 1, 1909..	186 00	200 00	
Mabou.....	J. McInnis.....	July 11, 1900..	0 50	100 00	
Mahone Bay .....	A. Huson.....	Feb. 18, 1908..	20 50	200 00	
McNair Cove.....	R. McEachern.....	Mar. 8, 1875..		150 00	
McKinnon Harbour.....	D. Y. McNeil.....	Oct. 9, 1909..		200 00	
Main à Dieu.....	Vacant.				
Marble Mountain.....	D. McDonald.....	July 26, 1892..		200 00	
Margaretsville. ....	Vacant.				
Margarets Bay .....	H. G. Garrison.....	Feb. 14, 1902..	3 50	100 00	
Margaree .....	F. P. Chiasson.....	Mar. 6, 1909..		100 00	
Marie Joseph.....	Chas. A. Dixon.....	Feb. 2, 1907..	1 00	100 00	
Merigomish .....	T. B. Olding.....	Mar. 11, 1910..		300 00	
Meteghan Harbour .....	J. McLair.....	Oct. 8, 1906..	8 00	100 00	
Meteghan River.....	L. A. Comeau.....	June 1, 1897..		100 00	
Middle South Harbour...	See Lunenburg.				
Mills Harbour.....					
Musquodoboit.....	Thos. Williams ..	May 31, 1905..	14 00	100 00	
New Haven .....	H. A. McLeod.....	Aug. 17, 1889..		100 00	
New Campbellton .....	See Big Bras d'Or.				
Neils Harbour.....	R. Payne.....	July 15, 1905..	1 00	100 00	
Noel.....	J. B. B. O'Brien ..	April 7, 1813..	12 50	200 00	
Northport.....	J. Davis.....	Dec. 21, 1903..	14 50	100 00	
Northeast Harbour.....	See Cape Negro.				
North Gut.....	See St. Anne.				
Northwest Cove.....	A. Setter.....	May 22, 1912..	1 50	200 00	
Ostrea Lake.....	See Musquodoboit.				
Parrsboro .....	W. R. Huntley.....	May 8, 1912..	67 00	300 00	
Petite de Grat.....	E. Bois.....	Feb. 9, 1912..	8 50	200 00	
Petite Rivière Bridge....	J. N. Parks.....	April 27, 1888..		100 00	
Plaster Harbour.....	Vacant.				
Port Beois... ..	See Big Harbour.				
Port George.....	Chas. B. Weaver ..	May 1, 1877..		150 00	
Port Greville.....	A. Graham .....	April 27, 1909..	25 00	200 00	
Port Hawkesbury.....	John Lamey.....	June 2, 1909 ..	101 50	200 00	
Port Hastings .....	G. L. McLean.....	Feb. 15, 1908..	104 50	200 00	
Port Hood .....	J. H. Murphy, Jr....	July 9, 1875..		200 00	
Port Latour.....	Wm. Sholds.....	Feb. 18, 1898..	3 50	200 00	



## SESSIONAL PAPER No. 21

LIST OF HARBOUR MASTERS—*Continued.**Nova Scotia—Concluded.*

Port.	Harbour Master.	Appointment.	Gross Collections.	Remuneration.	Net Collections.
			\$ cts.	\$ cts.	\$ cts.
Port Lorne.....	F. Beardsley.....	June 9, 1897..	.....	200 00	
Port Maitland.....	J. W. Raymond.....	Feb. 20, 1914..	.....	200 00	
Port Morien.....	H. McDonald.....	Mar. 3, 1879..	.....	400 00	
" Mulgrave.....	Jos. Moore.....	Jan. 20, 1912..	29 50	200 00	
" Midway.....	J. Hopking.....	Feb. 13, 1903..	6 50	200 00	
" Philip.....	Vacant.				
" Wade.....	A. Homes.....	Dec. 10, 1912..	25 50	200 00	
Pubnico.....	P. Belliveau.....	Nov. 25, 1911..	28 00	100 00	
Pugwash.....	Peter Stewart.....	Mar. 16, 1912..	32 00	100 00	
Queensport.....	Alex. Carr.....	Feb. 20, 1914..	.....	100 00	
Ritceys Cove, see River-					
port.....	F. J. C. Creaser.....	Jan. 8, 1901..	33 50	100 00	
River Bourgeois.....	E. C. Bouchie.....	April 9, 1886..	3 50	100 00	
	Dan'l Fougère, Deputy				
	Harbour Master.....	Aug. 12, 1889..	.....	Pd. by H.M.	
River Hebert.....	W. Y. Theal.....	July 24, 1905..	3 50	100 00	
River John.....	Campbell.....	June 1, 1891..	.....	100 00	
St. Anns Bay.....	D. McAskill.....	May 2, 1913..	33 00	200 00	
St. Marys River.....	S. E. Pride.....	Mar. 20, 1914..	.....	200 00	
St. Peters Harbour.....	P. McNeil.....	Sept. 17, 1883..	75 50	200 00	
St. Margarets Bay.....	See Margaret's Bay.				
St. Ann's Harbour.....	Alex. McLeod.....	April 16, 1909..	.....	200 00	
Sable Cape Island.....	See Clarkes Harbour.				
Sambro.....	H. W. Smith.....	Feb. 18, 1913..	19 50	200 00	
Sheet Harbour.....	Pat Coady.....	Aug. 5, 1912..	.....	200 00	
Shelburne.....	J. M. Jordan.....	May 13, 1912..	175 00	200 00	
Sherbrooke.....	See St. Marys River.				
Ship Harbour.....	H. Siteman.....	Feb. 22, 1911..	3 00	100 00	
Sonora.....	See St. Marys River.				
South Bar.....	See Victoria Pier.				
South West Cove.....	See North West Cove.				
Sydney.....	See International Pier,	Victoria Pier, Glasgow.			
Spencers Island.....	B. McLellan.....	May 22, 1899..	14 00	100 00	
Tangier.....	Alex. Mason.....	July 19, 1912..	9 50	200 00	
Tenny Cape.....	Wm. Stephen.....	Sept. 16, 1912..	.....	200 00	
Tatamagouche.....	Wm. Rielly.....	June 1, 1900..	.....	200 00	
Tidnish.....	R. B. Davidson.....	Feb. 19, 1910..	.....	100 00	
Tiverton.....	J. Blackford.....	April 3, 1900..	6 00	100 00	
Torbay.....	I. Fougère.....	Aug. 25, 1903..	8 00	200 00	
Tusket.....	C. Doucette.....	Nov. 21, 1902..	.....	100 00	
Upper L'Ardoise.....	See L'Ardoise.				
Upper Port Latour.....	See Port Latour.				
Victoria Pier (South Bay)	Vacant.				
Wallace.....	J. D. Patton.....	Feb. 14, 1898..	1 00	100 00	
Wedge Port.....	H. A. Leblanc.....	Mar. 3, 1911..	.....	100 00	
West Arichat.....	L. Forest.....	May 25, 1910..	.....	100 00	
Walton.....	J. W. Weir.....	Nov. 25, 1911..	67 50	200 00	
West Bay.....	Vacant.				
Westport.....	W. B. Welch.....	Dec. 21, 1912..	49 50	100 00	
	Albert Dakin, Deputy				
	Harbour Master.....	Mar. 30, 1914..	.....		
West River.....	See Sheet Harbour.				
Weymouth.....	A. Beaton.....	Mar. 11, 1912..	.....	200 00	
Whitehead.....	Levi Munroe.....	Feb. 8, 1909..	.....	200 00	
Whitehaven.....	See Whitehead.				
Whycocomagh.....	N. Matheson.....	July 6, 1909..	.....	100 00	
Windsor.....	C. W. Baird.....	April 10, 1912..	123 00	300 00	
Wolfville.....	J. L. Franklin.....	Aug. 16, 1901..	3 50	100 00	
Woods Harbour.....	G. Nickerson.....	Nov. 29, 1913..	8 50	200 00	
Washabuck.....	See Little Bras D'Or.				
Yarmouth.....	R. M. Ferguson.....	April 27, 1912..	209 50	250 00	



LIST OF HARBOUR MASTERS—Continued.

Prince Edward Island.

Port.	Harbour Master.	Appointment.	Gross Collections.	Remuneration.	Net Collections.
			\$ cts.	\$ cts.	\$ cts.
Alberton.....	A. Kinch.....	July 19, 1912..		200 00	
Bay Fortune .....	J. R. Coffin.....	Apr. 29, 1878..		200 00	
Brudenell.....	J. A. Gordon.....	Oct. 26, 1905..		200 00	
Cardigan River Bridge..	H. McDonald.....	July 2, 1878..		200 00	
Cardigan River to Mitchell River. ....	See Upper Cardigan River.				
Cove Head.....	M. Kielley .....	Apr. 23, 1914..		100 00	
Charlottetown and Hillsboro River.....	Jos. Ryan.....	May 3, 1912..	150 50	400 00	
Crapaud.....	W. Myers.....	June 17, 1874..		200 00	
Egmont Bay .....	H. Reeves.....	May 16, 1913 ..	1 00	200 00	
Georgetown.....	Sam Hamphill.....	Dec. 17, 1912..		200 00	
Grand River .....	I. Howlett.....	Aug. 26, 1912..		200 00	
Grand Tracadie.....	Jas. McAulay .....	Apr. 8, 1910..		200 00	
Hillsboro .....	See Charlottetown.				
Malpeque .....	Vacant.				
Miminegash.....	M. D. Lacy.....	Jan. 30, 1914..		100 00	
Montague Bridge.....	Vacant.....			200 00	
Murray Harbour.....	G. Billard.....	Oct. 30, 1913..		200 00	
Murray River. ....	Vacant.				
New London .....	J. Delaney .....	Apr. 28, 1914..	4 00	200 00	
Pinette.....	J. D. McDonald.....	Oct. 22, 1913..	0 50	100 00	
Port Hill. ....	Vacant.				
Pownal.....	M. Haley .....	Mar. 30, 1897..		100 00	
Rollo Bay. ....	Vacant.				
Rustico .....	T. Pineau .....	June 9, 1914..		200 00	
St. Peters Bay. ....	Geo. Barry.....	May 3, 1901..		200 00	
Souris, East and West...	Jos. Tierney .....	" 15, 1905..	30 50	200 00	
Summerside .....	Jno. Matheson.....	Feb. 8, 1907..		200 00	
Tignish.....	J. E. Richards.....	Sept. 16, 1912..		100 00	
Tracadie .....	See Grand Tracadie.				
Tryon .....	Vacant.				
Upper Cardigan River...	D. McKenzie.....	June 14, 1913..		100 00	
Vernon River Bridge .....	J. Finlay.....	Oct. 9, 1884..	2 00	200 00	
West River.....	Vacant.				
Woods Island .....	Jas. Young.....	May 22, 1899..		100 00	

British Columbia.

Chemainus.....	L. G. Hill.....	April 24, 1906..	16 50	200 00	
Comox.....	B. S. Abrams .....	June 12, 1914..		200 00	
Ladysmith .....	I. E. Lowe .....	" 26, 1912..	13 00	200 00	
Nanaimo (Departure Bay)	J. S. Knarston.....	Oct. 26, 1905..	382 00	500 00	
New Westminster now	under Hbr. Com .....		211 00	400 00	
Snug Harbour.....	J. W. Davies .....	July 19, 1911..	3 00	200 00	
Vancouver .....	A. H. Reid.....	Jan. 30, 1911..	866 50	600 00	266 50
Victoria-Esquamalt .....	C. E. Clarke .....	Nov. 3, 1894..	657 00	600 00	57 00
Prince Rupert.. ....	E. McCroskie.....	Mar. 16, 1912..	242 50	600 00	
Quadra .....	Vacant.				
Union.....	See Comox.. ....		302 50	200 00	102 50



## SESSIONAL PAPER No. 21

STATEMENT of Sick Mariners' Dues during the Fiscal Year ending March 31, 1914.

Name of Port.	Amount.	Name of Port.	Amount.
	\$ cts.		\$ cts.
QUEBEC.		NOVA SCOTIA— <i>Con</i>	
Gaspé .....	70 08	Lockeport .....	18 17
Montreal .....	7,030 40	Lunenburg .....	286 13
Paspebiac .....	185 33	North Sydney .....	1,082 74
Percé .....	72 20	Parrsboro. ....	316 90
Quebec .....	8,236 32	Pictou .....	273 09
Rimouski. ....	161 51	Port Hawkesbury .....	100 89
St. Johns .....	1,246 74	Port Hood. ....	14 10
Sorel .....	80 65	Shelburne .....	61 66
Three Rivers .....	60 08	Sydney .....	3,541 80
	17,148 32	Truro. ....	4 91
		Weymouth .....	181 53
		Windsor .....	903 21
		Yarmouth .....	404 83
			25,339 91
NEW BRUNSWICK.		BRITISH COLUMBIA.	
Campbellton .....	426 88	Nanaimo .....	2,512 16
Chatham .....	653 86	New Westminster .....	97 99
Dalhousie .....	608 82	Prince Rupert .....	532 15
Fredericton .....	49 41	Vancouver .....	5,206 47
Moncton .....	696 07	Victoria .....	8,778 51
Newcastle .....	413 20		17,127 28
Sackville .....	108 58		
St. Andrews .....	51 82		
St. John .....	7,598 36		
St. Stephens .....	71 10		
	10,678 10		
		PRINCE EDWARD ISLAND.	
		Charlottetown .....	282 26
		Summerside .....	73 62
			355 88
NOVA SCOTIA.		GRAND TOTAL OF PROVINCES.	
Amherst .....	294 90	Quebec .....	17,148 32
Annapolis Royal .....	191 69	New Brunswick .....	10,678 10
Antigonish .....	0 81	Nova Scotia .....	25,339 91
Arichat .....	13 50	British Columbia .....	17,127 28
Baddeck .....	56 48	Prince Edward Island .....	355 88
Barrington .....	11 37		70,649 49
Bridgewater .....	340 85		
Canso .....	42 81		
Digby .....	132 72		
Halifax .....	16,968 99		
Kentville .....	3 13		
Liverpool .....	92 70		



MARINE REGISTERS, FEES, 1913-14.

Name of Port.	Amount.	Name of Port.	Amount.
ONTARIO.	\$ cts.	MANITOBA.	\$ cts.
Kingston... ..	3 05	Winnipeg.....	1 20
Ottawa.....	1 00		
Toronto . . . . .	3 92	BRITISH COLUMBIA.	
Total....	7 97	Victoria.. . . . .	15 92
QUEBEC.		PRINCE EDWARD ISLAND.	
Montreal.....	6 40	Charlottetown.....	1 00
Quebec.....	8 96		
Total.....	15 36	TOTALS.	
NEW BRUNSWICK.		Ontario.....	7 97
.....	Nil.	Quebec .....	15 36
NOVA SCOTIA.		Nova Scotia.....	11 40
Halifax ... ..	3 40	New Brunswick.....	
Liverpool.....	25	Manitoba.....	1 20
Lunenburg.....	5 00	British Columbia.....	15 92
Shelbourne.....	1 40	Prince Edward Island .....	1 00
Yarmouth.....	1 35		
Total.....	11 40	Grand total.....	52 85

SIGNAL STATION DUES.

Name of Port.	Amount.
PROVINCE OF NOVA SCOTIA.	\$ cts.
Halifax....	751 00



SESSIONAL PAPER No. 21

STATEMENT OF STEAMBOAT INSPECTION FEES COLLECTED DURING THE FISCAL YEAR  
ENDED MARCH 31, 1914.

Name of Port.	Amount.	Name of Port.	Amount.
ONTARIO.	\$ cts.	BRITISH COLUMBIA.	\$ cts.
Port Arthur.....	45 68	Vancouver.....	615 20
Windsor.....	138 40	Victoria.....	534 80
Total.....	184 08	Total.....	1,150 00
QUEBEC.			
Quebec.....	146 16		
NEW BRUNSWICK.		TOTAL OF ALL PROVINCES.	
St. John.....	602 00		
NOVA SCOTIA.		Ontario.....	184 08
Halifax.....	1,258 56	Quebec.....	146 16
Kentville.....	92 64	New Brunswick.....	602 80
North Sydney.....	115 44	Nova Scotia.....	1,473 11
Shelbourne.....	6 47	British Columbia.....	1,150 00
Total....	1,473 11	Total.....	3,556 15

STATEMENT of Expenditure of Marine Branch from Confederation to March 31, 1914.

	\$ cts.		\$ cts.
1868.....	371,070 56	1891.....	885,410 11
1869.....	360,899 90	1892.....	861,426 80
1870.....	367,189 11	1893.....	898,720 03
1871.....	389,537 12	1894.....	905,654 34
1872.....	518,958 49	1895.....	895,828 28
1873.....	706,817 92	1896.....	793,634 49
1874.....	845,150 90	1897.....	867,772 90
1875.....	844,586 09	1898.....	856,192 50
1876.....	970,146 27	1899.....	1,102,601 90
1877.....	820,054 38	1900.....	982,561 97
1878.....	786,156 23	1901.....	1,029,925 32
1879.....	755,359 47	1902.....	1,501,618 88
1880.....	723,390 89	1903.....	1,671,494 77
1881.....	761,730 62	1904.....	2,150,940 31
1882.....	774,831 53	1905.....	4,747,722 81
1883.....	825,010 82	1906.....	5,066,252 66
1884.....	927,241 61	1907.....	3,637,599 82
1885.....	1,129,901 14	1908.....	5,374,774 18
1886.....	980,120 59	1909.....	4,692,806 85
1887.....	917,557 31	1910.....	4,197,420 24
1888.....	883,250 85	1911-12.....	4,911,140 67
1889.....	1,023,801 34	1912-13.....	5,213,223 55
1890.....	807,417 53	1913-14.....	5,828,027 37



## APPENDIX No. 6.

## METEOROLOGICAL SERVICE.

TORONTO, May 1, 1914.

SIR,—I have the honour to submit the forty-third annual report of the Meteorological Service for the fiscal year ended March 31, 1914, with appendices A and B reports of the observatories at Quebec city, Que., and St. John, N.B.

Reports have been received at the central office from 657 stations, including telegraph reporting stations, climatological and storm signal stations. For various duties in connection with the service, 322 persons, chiefly observers, have been in receipt of remuneration, and of this number thirty-six were employed in the central office.

The collection of reports from over 500 climatological stations, the computation of mean values, and the preparation of abstracts for publication entail an enormous amount of work in the statistical branch of the head office, but changes of method and the reorganization of this work noted in my last report have worked out satisfactorily, and the issue of reports has been facilitated. Still further improvement is expected during the coming year.

A new branch of the service has been inaugurated for the study of agricultural meteorology, with Mr. R. W. Mills, B.S.A., in charge. The importance of scientific investigation of the relationship between the weather and the growth of crops has thus been recognized, and it is proposed to co-operate in the scheme outlined conjointly by the "International Meteorological Committee" and the "International Institute of Agriculture."

## FORECASTS AND STORM WARNINGS.

Bi-daily synchronous weather charts have been compiled on every day throughout the year, Sundays and holidays included, based on telegraphic reports from thirty-nine stations in Canada, 100 from the United States, five from Newfoundland, and one from Bermuda. These charts have formed the basis of the forecasts and storm warnings which have been issued from Toronto for all the provinces, exclusive of British Columbia. Nearly every newspaper in the Dominion has published these forecasts, and in addition to this journalistic dissemination, special copies of all weather bulletins have been distributed quite widely in the larger centres of population, and at the seaports. Arrangements have also been made for a more general distribution of the forecasts over the various provincial telephone systems, and the Bell Telephone Company has agreed to furnish the forecasts free of charge to all their subscribers connected with a central exchange to which a weather bulletin is furnished. The daily bulletin compiled in Winnipeg, and including some forty-four reports from places in the western provinces, as well as the central office forecasts, has been improved and more widely distributed both in Winnipeg and the larger centres of the West.

Storm warnings have been issued to 111 display stations in Canada and four in Newfoundland, and of 2,271 warnings issued 95 per cent were verified by subsequent high winds; 304 warnings were received late, 186 owing to issue, and 118 owing to telegraphic delays. The storm-signal mast has been transferred from Port Hastings to Point Tupper, N.S.



## SESSIONAL PAPER No. 21

Forecasts have been telegraphed twice daily to Newfoundland, and storm warnings were issued when it was deemed expedient. In all no less than fifty-four separate warnings were sent, covering 181 stations, but so far no word of any kind has been received from that country, as to the verification of the warnings which, the records of the salaried observers seem to show, have been most satisfactory.

## PHENOLOGICAL OBSERVATIONS.

A valuable work performed at the central office has been the collection of phenological statistics by observers and others connected with the meteorological service, and this has been done under the supervision of Mr. F. F. Payne.

## MAGNETIC OBSERVATIONS.

Records of the various magnetic elements were secured at the observatory, Agincourt, without interruption throughout the year. The zeros of the differential photographic recording instruments were determined by absolute observations as formerly, weekly for declination, and twice monthly for horizontal force. Absolute observations of inclination were made weekly with the Toepfer Earth Inductor.

Westerly declination has increased from  $6^{\circ} 17.1'$  in March 1913, to  $6^{\circ} 22.4'$  in March 1914. The horizontal force has decreased from 0.16150 C.G.S. units to 0.16099, and the inclination has increased from  $74^{\circ} 40.7'$  to  $74^{\circ} 41.7'$ .

The year was marked by the absence of large magnetic disturbances and the very infrequent occurrence of even smaller disturbances; 233 days were classified as calm, 126 as lightly disturbed, and six days as disturbed. The largest disturbance of the year occurred on May 5 and 6. The range of declination during the disturbance was  $55'.0$  and in horizontal force the range was 121.

The mean diurnal range of declination varied from a maximum of  $12.5'$  in August 1913, to a minimum of  $4.2'$  in February 1914, whilst that of horizontal force varied from a maximum of  $38\gamma$  to a minimum of  $10\gamma$  in corresponding months.

During the year, index corrections for the magnets attached to eighty-eight surveyors' theodolites were determined, and supplied to the Surveyor General.

Assistance and instruction were given to several surveyors in the use of the total force instrument, and in the determination of their constants, both before and after their field work.

Assistance was also given to Mr. French, of the Ottawa Dominion Observatory, in getting comparisons between his field instruments and the Agincourt standards.

Mr. W. H. McKinlay, who was appointed to the Steffansson expedition as magnetician, was given thorough instruction in the use of the magnetic instruments, and was furnished with all necessary instruments and books for properly carrying on magnetic survey work.

A collaboration of the magnetic data obtained since 1872 at Toronto and Agincourt is also in progress, by Mr. W. E. Jackson, B.A., who, with Mr. William Menzies, carries on the work of the magnetic observatory.

## TIME SERVICE.

During the year ended March 31, 1914, seventy-one determinations for time were made by transit of stars, and eleven solar transits in the meridian with the 3-inch Troughton & Simms transit instrument. The sky was very much clouded during the autumn and early winter months. The positions of the stars have been taken from the American Ephemeris and Berliner Jahrbuch. The collimation error of the transit instrument has been determined by the usual method of reversal on polaris and in conjunction with that of the instrumental azimuth by star transits in reverse position of the axis, using the method of least squares in their computation.



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Time has been given over the telegraph and telephone lines to all inquirers. A greatly increased demand is now being made on the time service, and to meet this there is now being installed one of the large "Magneta Clocks" of four circuits, capable of controlling 120 secondary clock units, and also a new seconds mean time clock, in the main building for convenient use in giving time over the telephone. Both these clocks are being equipped for synchronization with the standard mean time clock in the clock room. With this additional increase to the present clock equipment, the time service will be in a position to control and synchronize any of the master clocks running large secondary clock systems in various parts of the city.

The usual time exchanges between Toronto and Quebec, Montreal and St. John, N.B., have been made, being recorded on the chronographs at Toronto, Montreal, and St. John. The errors of the clocks have been computed from the latest observations. The 11.55 a.m. signals have been given over the fire alarm systems throughout the year.

Time has been given weekly to the magnetic observatory at Agincourt, and daily to the Canadian Northern Railway, running out of Toronto.

The following table will show the differences between the times at the several observatories and that at Toronto. The sign + indicates slow of Toronto.

Date.	Montreal.	Quebec.	St. John.
1913.	Seconds.	Seconds.	Seconds.
April 11 .....	-1.26	-0.74	-0.50
April 25 .....	-2.33	-1.46	-0.51
May 9. ....	+1.19	+1.49	-0.11
May 30.....	-2.05	-1.31	+0.43
June 13.....	-1.96	-0.49	-0.72
July 11.....	-2.00	-0.05	-0.15
July 25.....	-1.90	+0.53	+0.54
August 29.....	+0.33	+0.34	
September 19.....	-2.35	+0.12	-0.48
October 10.....	-2.51	-0.03	-0.67
October 31, .....	-1.04	-0.03	+0.17
November 14 .....	-1.53	+0.95	-0.19
November 28.....	-1.31	-1.06	-0.52
December 19.....	-1.40	+0.32	-0.10
1914.			
January 16.....	-3.61	+0.22	-1.58
February 6.....	-1.45	+1.01	-0.10
February 27.....	+0.04	+2.41	+0.85
March 30.....	-1.31	+0.32	-0.33

SOLAR OBSERVATIONS.

The sun was observed upon 144 days, on 130 of which it was without spots. From April 1 to September 8, 1913, was a period during which the sun was spotless as far as the observations taken would show, but quite a number of cloudy intervals was experienced. The following are the days on which spots were seen:—

1913. September 8; October 6, 7; November 24, 25; December 11, 12, 30.

1914. February 2, 3, 5; March 16, 17, 31.

Maps of these days were made showing the position of the spots—the north, south, east and west points of the sun's disc being shown; also the sun's axis and equator.

PHYSICS BRANCH.

The exploration of the upper atmosphere by means of balloons and kites has been continued satisfactorily, as fourteen records of pressure and temperature from heights ranging between 5 and 10 miles above the earth's surface have been obtained.



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The following table gives a summary of the balloon records:—

Date.	A	B	C	D	E	F	G
1913.		°		°			
May 6.....	8.1	-88	13.0	-74	NE.	90.1	N. 65 E.
May 9.....	7.5	-71	9.9	-69	S.	193.2	S. 80 E.
August 6. ....	7.2	-59	8.1	-58	W.	94.4	S. 60 E.
September 4.....	9.1	-98	10.9	-80	SW.	83.9	S. 40 E.
October 1.....	9.4	-76	9.4	-76	N.	62.1	S. 75 E.
November 5.....	7.7	-98	9.1	-91	SE.	176.0	S. 22 E.
November 7.....	7.2	-83	7.8	-80	N.	211.3	N. 65 E.
December 4.....	6.4	-61	6.6	-59	SE.	105.0	S. 40 E.
1914.							
January 8.....	6.4	-59	7.7	-51	N.	152.0	S. 78 E.
February 2.....	5.6	-57	9.6	-69	E.	142.3	S. 84 E.
February 3.....	6.5	-76	7.8	-61	NW.	182.1	N. 70 E.
February 5.....	5.2	-63	6.5	-55	E.	193.2	N. 70 E.
February 6. ....	6.2	-78	6.2	-78	W.	220.0	N. 86 E.

- A— Height in miles to beginning of stratosphere.
- B—Temperature Fahrenheit at beginning of stratosphere.
- C—Greatest height, in miles, reached by balloon.
- D—Temperature Fahrenheit at greatest point.
- E—Direction balloon travelled at starting point.
- F—Distance, in miles, of point where balloon fell from starting point.
- G—Bearing of point where balloon fell from starting point.

A continuous record of the potential of the air has been obtained from the self-recording electrometer, and, when possible, daily observations of solar radiation have been obtained from the Angstrom Pyrheliometer.

SEISMOLOGICAL OBSERVATIONS.

The Milne seismographs at Toronto and Victoria, B.C., have been kept in operation throughout the year, and no change has been made in the adjustments of the instruments, the booms being kept at a period of 18 seconds. There has been a marked absence of any very large movement. The total number of disturbances recorded at Toronto was 105, and at Victoria 98, of which 85 per cent were less than 1 millimetre in amplitude. The most important of the series were on May 30, June 26, August 6, October 2, and March 30, the maximum amplitude varying from 3 to 10 millimetres. The earthquake centre of the quake of June 26 was in the Tonga group of islands; that of August was in Peru; October 2 in the Panama zone, and March 30 probably in the Caribbean sea. On February 10, at 1 h. 32.5 m., was recorded a pronounced local earthquake, the swing of the boom being 2.3 mm. This earthquake was felt throughout Ontario, Quebec, New England and New York States, and as far south as Washington, D.C. It was still more severely felt in the St. Lawrence valley. In Toronto, pictures on the walls swayed, and tall buildings perceptibly vibrated; no damage was done. The last local quake recorded by the instrument occurred on May 27, 1912, but was of less extent than that of February 10.

Monthly reports of all seismic tabulations, and copies of all the more important records of disturbance are sent to the central earthquake observatory of the British Association, and also to the International Seismological Institution at Strassburg, Germany, and to various observatories.

The increased request for copies of our observations from all parts of the world indicate a growing interest in seismology, and marks the importance of our Canadian observations in helping to arrive at the solution of the laws governing disastrous earthquakes.



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The number of chief and telegraph-reporting stations has not changed, but the instrumental equipment has, in most instances, been augmented. The importance of having a chief meteorological station in each province, to which persons seeking information may either go or write, has been rendered very apparent by the useful work performed at Victoria, Edmonton, and Moosejaw, respectively, the chief stations for British Columbia, Alberta, and Saskatchewan. I hope in the near future to open such a station in Manitoba, and to arrange for a broadening of the St. John Observatory work in relation to the Maritime Provinces. New observers have been appointed at Swift Current and White River in place of those who have resigned.

A small observatory building has been erected on Gonzales Hill, Victoria, B.C., which will afford better facilities for carrying on both the forecast work of British Columbia, and the seismological research which, under Mr. F. N. Denison's enthusiastic attention, has become one of the most important subjects of scientific investigation in Victoria. Mr. Denison has been placed in charge of the new observatory and the forecasting, while Mr. E. Baynes Reed, remains in charge of the climatological work which he has so ably conducted in the past.

A local meteorological office has been established in Vancouver, where persons requiring information regarding the weather may apply. The daily time signals for the port will also be given from this office, and ship captains may there have their chronometers rated.

An observatory has also been erected in St. John, N.B., where the accommodation contained in the former building had become inadequate for both meteorological and time service requirements. The report of the observatory is Appendix B.

Officers of the inspection division visited the following places during the fiscal year, giving instructions, adjusting instruments, selecting sites, and performing such work as comes under the heading of "Inspection": Port Hope, Cobourg, Deseronto, Kingston, Prinyer, Picton, Fort Churchill, York Factory, White River, Nipigon, Rossport, Heron Bay, Grassett, Chapleau, Bisco, Sault Ste. Marie, Port McNichol, Shawinigan Lake, Nanaimo, Esquimaux Point, Harrington harbour, Natashquan, Long Point of Mingan, Thunder River, Moisie, Seven Islands, Chicoutimi, Chicoutimi West, Tadoussac, Sherbrooke, Stonecliffe, Winnipeg, Port Arthur, Fort William, Minnedosa, Qu'Appelle, Moosejaw, Swift Current, Medicine Hat, Calgary, Edmonton, Prince Albert, Battleford, Banff, Vancouver, Victoria, St. John, Grand Manan, St. Andrews, Digby, Yarmouth, Parrsboro, Wolfville, Halifax, Truro, Point Tupper, Canso, Sydney, North Sydney, Louisburg, Port Morien, Bay St. Lawrence, Dingwall, Neils Harbour, North Ingonish, South Ingonish, Breton Cove, New Campbellton, Cranberry Head, Alder Point, Glace Bay, Lower L'Ardoise, Petit de Grat, Port Hood, Grand Etang, Cheticamp, Margaree harbour, Point du Chene, Richibucto, Bathurst, Caraquet, Shipigan, Dalhousie, Point St. Peter, S. W. Point, Anticosti, Amherstburg, Pelee island, Port Stanley, Parry Sound and Kamloops.

Close inspection of stations is essential to the proper and efficient carrying on of the work of the service, and also to ensure that instruments are being kept in proper adjustment, and that the regulations of the service are being interpreted in the same uniform manner throughout the Dominion. It is expedient that an officer of this service inspect localities in which it is proposed to establish paid stations of the service, and also that the telegraph reporting stations be inspected at least once each year.



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Climatological stations have been opened at the following places:—

## BRITISH COLUMBIA.

Class II	Alert Bay.....	Miss A. Nevill.
" II	Britannia Beach.....	J. W. D. Moodie.
" II	Boswell.....	Mrs. K. Wallace.
" II	Cobble Hill.....	A. Allen.
" II	Chinook Cove.....	Malcolm White.
" II	Cranberry Lake.....	John Bocz.
" II	East Arrow Park.....	Henry Miller.
" II	Fernie.....	Charles E. Murphy.
" II	Fifteen-mile Ranch, Pavilion, P.O.....	L. Hoover.
" II	Gillis Bay.....	P. A. Staaf.
" II & S	Invermere.....	G. E. Parham.
" III	James Island .. .	Wm. G. Round.
" II	Ladysmith .. .	John Stewart.
" II	Mary Island.....	James Milne.
" II	Okanagan Centre.....	J. W. Fowler.
" II	Perry Siding .. .	E. W. Dawdney.
" II	Qualicum Beach.....	Captain G. Lake.
" II	Sooke Lake.....	J. P. McNeill.
" II & S	Sidney.....	Samuel Spencer.
" III	Stamps Falls .. .	R. C. McNight.
" II	Vanvenby .. .	J. L. Moillette.
" II	Westley.....	H. G. Slatter.

## ALBERTA.

Class II	Alsask.....	F. C. Bohannon.
" II	Brazeau.....	G. Blyth.
" III	Clarinda.....	Mrs. Francis Clark.
" II	Claresholme.....	J. C. Hooper.
" II	Expanse Coulee.....	J. E. Lloyd.
" II	Edson .. .	P. F. Robin.
" I	Fort Smith.....	.....
" II	Grande Prairie.....	S. J. Webb.
" II	Jasper .. .	Lt. Col. S. Maynard Rogers.
" II	Lloydminster.....	H. M. Bennett.
" II	Medicine Hat.....	Neil McKinnon.
" II	Perbeck.....	F. Saggars.
" II	Ronalane.....	F. H. Kelly.
" II	Stony Plain.....	W. D. Breckon.
" II	Sedgewick .. .	H. H. McIntyre.
" II	Springdale.....	D. G. Glyde.
" II	Suffield.. .	W. C. Hutchinson.
" II	Vermillion .. .	W. H. Scott.
" III	Battle Creek .. .	Angus MacKinnon.

## SASKATCHEWAN.

Class II	Strongfield.....	A. Synder.
" II	Pelly.....	H. N. Lea.
" II	Whitewood.....	Joseph Callin.

## ONTARIO.

Class II	Big Chute, Buckskin.....	Peter Ritchie.
" II	Bisco.....	T. L. Barker.
" II	Chapleau .. .	A. L. Smith.
" II	Dryden.....	R. G. Wiggle.
" II	Grassett .. .	J. H. Ruest.
" II	Grimsby North.....	E. W. Bowslaugh.
" II	Heron Bay.....	C. A. Oehm.
" II	Ignace .. .	John Davies.
" II	Morrisburg.....	L. W. Barkley.
" II	Meaford.....	Miss J. E. Barbour.
" II	Niagara Falls.....	A. Collins.
" II	Nipigon.....	J. J. Barker.
" II	Oscar .. .	N. F. Gale.
" II	Rainy River.....	W. J. Harris.
" II	Shoal Lake.....	Charles E. Aitken.
" II	Sunbridge.....	D. MacDonald.
" II	Savanne .. .	A. Brotherton.
" II	Sioux Lookout.....	James White.
" II	Tobermory .. .	W. J. Smith.
" II	Wewaitin.....	N. C. Power Co.



QUEBEC.

Class II	Amos.....	H. Authier.
" II	Beauceville.....	Rev. Fr. Antonin.
" III	Comfort Point.....	A. R. Scharf.
" III	Causapscal.....	Rev. Cure Z. Belles Isles.
" II	Drummondville.....	Rev. Fr. Romulus
" II	Huberdeau.....	R. J. L. Salomoni.
" II	Huntingdon.....	A. Sellar.
" II	Joliette.....	Rev. L. J. Morin.
" II	La Loutre Rapids.....	P. A. Shaw.
" II	Murray Bay.....	Rev. M. P. Hudon.
" II	Maniwaki.....	Rev. Sr. Ste. Valeria.
" II	Megantic Lake.....	Rev. Bro. Amable.
" II	Nomining.....	Rodolphe Mercure.
" II	Nicolet.....	Rev. J. A. Bellerin.
" II	St. Lin des Laurentides.....	Rev. Fr. Francis.
" II	Stag Island.....	L. T. Bowes.
" II	Tadoussac.....	Rev. J. A. L. Blais.
" II	Ville Marie.....	Rev. J. B. Levesque.

NEW BRUNSWICK.

Class II	Edmunston.....	J. C. Carruthers.
" II & S	Fredericton Experimental Farm.....	W. W. Hubbard.
" II	Grand Falls.....	H. Callaghan.
" II	Woodstock.....	M. Ryan.

NOVA SCOTIA.

Class II & S	Kentville Experimental Farm.....	W. S. Blair.
" II	Liverpool.....	Miss J. E. Mullins.
" II	Sutherland River.....	E. W. Heurtley.

PRINCE EDWARD ISLAND.

Class II	Summerside.....	J. F. Lafferty.
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Respectfully submitted,  
R. F. STUPART,  
Director.



NUMBER OF PREDICTIONS and Percentage of Fulfilment in each District in each Month, for the Year April 1, 1913, to March 31, 1914.

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METEOROLOGICAL REPORT

Month.	Alberta.					Saskatchewan.					Manitoba.					Lake Superior.					Lower Lake.					Georgian Bay.					
	No. of predictions.	No. fully verified.	No. partly verified.	No. not verified.	Percentage verified.	No. of predictions.	No. fully verified.	No. partly verified.	No. not verified.	Percentage verified.	No. of predictions.	No. fully verified.	No. partly verified.	No. not verified.	Percentage verified.	No. of predictions.	No. fully verified.	No. partly verified.	No. not verified.	Percentage verified.	No. of predictions.	No. fully verified.	No. partly verified.	No. not verified.	Percentage verified.	No. of predictions.	No. fully verified.	No. partly verified.	No. not verified.	Percentage verified.	
1913.																															
April.....	78	71	6	1	94.9	78	61	15	2	87.8	78	64	11	3	89.1	110	82	24	4	85.5	112	93	13	6	88.8	110	91	12	7	88.2	
May.....	81	64	12	5	86.4	81	62	16	3	86.4	80	60	17	3	85.6	116	89	22	5	86.2	110	83	22	5	85.5	110	81	22	7	83.6	
June.....	74	50	16	8	78.4	75	48	18	9	76.0	78	55	15	8	80.1	111	71	27	13	76.1	113	92	19	2	89.8	113	88	21	4	87.1	
July.....	81	58	16	7	81.5	80	56	16	8	80.0	80	60	12	8	82.5	125	76	33	16	74.0	125	105	14	6	89.6	125	101	16	8	87.2	
August.....	82	63	13	6	84.7	81	62	11	8	83.3	83	66	11	6	86.1	120	85	21	14	79.6	125	102	15	8	87.6	125	105	8	12	87.2	
September.....	75	52	14	9	78.7	71	45	15	11	73.9	81	49	23	9	74.7	119	84	26	9	81.5	118	98	16	4	89.8	116	90	21	5	86.6	
October.....	77	59	8	10	81.8	78	61	12	5	85.9	82	60	12	10	80.5	109	69	30	10	77.1	124	94	24	6	85.5	124	100	21	3	89.1	
November.....	75	52	15	8	79.3	75	54	16	5	82.6	75	54	15	6	82.0	123	87	29	7	82.5	118	82	31	5	82.6	119	87	27	5	84.5	
December.....	81	67	14	.....	91.4	81	62	15	4	85.8	81	69	7	5	89.5	119	88	22	9	83.2	125	96	23	6	86.0	125	96	23	6	86.0	
1914.																															
January.....	89	63	18	8	80.9	87	62	17	8	81.0	88	59	23	6	80.1	102	81	18	3	88.2	118	95	14	9	86.4	118	93	15	10	85.2	
February.....	74	60	7	7	85.8	74	62	10	2	90.5	75	65	8	2	92.0	88	76	8	4	90.9	102	87	12	3	91.2	101	84	9	8	87.6	
March.....	76	62	10	4	88.2	76	68	6	2	93.4	77	59	13	5	85.0	88	63	17	8	81.3	105	87	12	6	88.6	108	81	19	8	83.8	
Totals.....	943	721	149	73	84.3	937	703	167	67	83.9	958	720	167	71	84.0	1330	951	277	102	82.2	1395	1114	215	66	87.6	1394	1097	214	83	86.3	



NUMBER OF PREDICTIONS and Percentage of Fulfilment in each District, &c.—*Concluded.*

Month.	Ottawa Valley.					Upper St. Lawrence.					Lower St. Lawrence.					Gulf.				
	No. of predictions.	No. fully verified.	No. partly verified.	No. not verified.	Percentage verified.	No. of predictions.	No. fully verified.	No. partly verified.	No. not verified.	Percentage verified.	No. of predictions.	No. fully verified.	No. partly verified.	No. not verified.	Percentage verified.	No. of predictions.	No. fully verified.	No. partly verified.	No. not verified.	Percentage verified.
1913.																				
April .....	93	76	13	4	88.7	94	78	13	3	89.9	97	76	17	4	87.1	114	81	21	12	80.3
May .....	89	79	8	2	93.3	89	76	11	2	91.6	107	86	17	4	88.3	111	78	29	4	83.3
June.....	102	81	19	2	88.7	102	82	18	2	89.2	119	83	25	11	80.3	120	74	35	11	76.2
July .....	110	90	18	2	90.0	110	92	16	2	90.9	124	92	24	8	83.9	126	82	34	10	78.6
August .....	93	76	8	9	86.0	92	79	4	9	83.0	105	82	9	14	82.4	115	84	11	20	77.8
September.....	94	74	18	2	88.3	92	78	12	2	91.3	122	89	21	12	81.6	121	93	17	11	83.9
October .....	93	78	13	2	90.9	93	76	12	5	88.2	103	70	28	5	81.6	111	76	21	14	77.9
November .....	99	72	19	8	82.3	99	72	20	7	82.8	119	80	29	10	79.4	122	91	24	7	84.4
December .....	116	89	21	6	85.8	117	89	25	3	86.8	127	92	31	4	84.6	127	97	24	6	85.8
1914.																				
January .....	103	85	11	7	87.9	103	86	10	7	88.3	103	86	4	13	85.4	114	98	6	10	88.6
February .....	93	72	18	3	87.1	92	75	14	3	89.1	94	81	12	1	92.5	100	86	10	4	91.0
March .....	102	80	17	5	86.8	102	80	18	4	87.3	118	89	14	15	81.4	119	85	24	10	81.5
Totals .....	1187	952	183	52	85.0	1185	963	173	4	988.7	6138	1006	231	101	84.4	1400	1025	256	119	82.4

Month.	Maritime West.					Maritime East.					Totals.				
	No. of predictions.	No. fully verified.	No. partly verified.	No. not verified.	Percentage verified.	No. of predictions.	No. fully verified.	No. partly verified.	No. not verified.	Percentage verified.	No. of predictions.	No. fully verified.	No. partly verified.	No. not verified.	Percentage verified.
1913.															
April .....	118	91	23	4	86.9	118	83	27	8	81.8	1200	947	195	58	87.0
May .....	109	91	15	3	90.4	109	90	17	2	90.4	1192	939	208	45	87.5
June.....	117	77	29	11	78.2	117	74	31	12	76.5	1241	875	273	93	81.5
July .....	126	92	28	6	84.6	126	95	25	6	86.1	1338	999	252	87	84.1
August .....	118	96	18	4	89.0	118	98	15	5	89.4	1257	998	144	115	85.1
September .....	124	90	30	4	84.7	124	87	32	5	83.1	1257	929	245	83	83.6
October.....	107	72	27	8	79.9	107	77	20	10	81.3	1208	892	228	88	83.3
November.....	120	94	18	8	85.8	120	91	22	7	85.0	1264	916	265	83	82.9
December.....	127	91	29	7	83.1	131	87	33	11	79.0	1357	1023	267	67	85.2
1914.															
January .....	124	95	14	15	82.3	124	90	17	17	79.4	1273	993	167	113	84.6
February.....	112	85	19	8	84.4	114	85	19	10	82.9	1119	918	146	55	88.8
March .....	121	90	27	4	85.5	121	89	27	5	84.7	1213	933	204	76	85.6
Totals .....	1423	1064	277	82	84.6	1429	1046	285	98	83.3	14919	11362	2594	963	84.9



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## APPENDIX A.

## QUEBEC OBSERVATORY.

QUEBEC, April 20, 1914.

The Director, Meteorological Service,  
Toronto.

DEAR SIR,—I have the honour to transmit my annual report for the year ending March 31, 1914, as follows:—

All the meteorological observations were taken daily without interruption, and the instruments are in very good order. A barograph, a hair hygograph and a self-recording rain gauge have been supplied to this station which is now provided with most of the instruments of a first-class meteorological observatory.

The weather bulletin issued by the central office has been posted regularly at the principal places of the city, and published in all the newspapers.

Inquiries respecting the weather conditions were very numerous, and statistics were prepared and furnished to the public, and also given in many cases before the courts.

Standard stars were observed on nearly every fine night, and the correct time given by means of the time ball, the noon gun and by telephone.

Several chronometers were rated, and barometers compared with our standard instrument and adjusted.

The present transit instrument has been in use for a considerable length of time and the time service would be very much improved if it were replaced. The equatorial telescope would require some repairs, but before putting it in good order a new tower should be erected and the old dome replaced to protect the instrument.

During the month of February last, I was requested to report as to the proposed improvements and necessary repairs to the buildings so as to make them in keeping with the National Battlefields Park in which they are situated.

After conferring with the authorities of the National Battlefields Commission, and taking the advice of the resident engineer of the Department of Public Works, I deemed it my duty to report that a new building was needed.

I have the honour to be, sir,

Your obedient servant,

ARTHUR SMITH,  
*Director, Quebec Observatory.*



5 GEORGE V., A. 1915

## APPENDIX B.

## METEOROLOGICAL SERVICE,

ST. JOHN OBSERVATORY,

ST. JOHN, N.B., April, 1914.

R. F. STUPART, F.R.S.C.,  
Director, Meteorological Service,  
Toronto.

SIR,—I have the honour to submit the following report upon the operations of the observatory at St. John for the fiscal year ending March 31, 1914.

## METEOROLOGICAL SERVICE.

The usual meteorological observations, reports, and records have been continued without interruption. No changes have been made in the exposure of the instruments; all are in a most satisfactory condition. The bi-daily observations made at 9 a.m. and 9 p.m. have been immediately telegraphed to the central office at Toronto.

Requests for statistical information from the records were answered by letter, telephone, and to persons calling at the office; this considerably increases the clerical work, and during the past year these demands have been decidedly active. Adjustment of claims for demurrage, damage to goods in transit, etc., by frosts, gales, and heavy precipitation are made by reference to our wind and weather records. Requests for climatological statistics covering this district have been only partially dealt with, as the particular information sometimes required is not fully available here. In addition to the daily and monthly synopses supplied to the press, special items during periods of stormy, extreme and other conditions of interest to the public, are furnished for publication.

Through the courtesy of the New Brunswick Telephone Company, the Toronto forecasts are at the opening hour sent to all their offices where they are posted on forms supplied by the Meteorological Service. This extensive and valuable dissemination of the forecasts is most useful in localities where they are not available by telegraphic facilities.

## WEATHER BULLETIN.

The daily weather bulletin has been issued each working day throughout the year, without change in form but with increased circulation. Immediately upon receipt of the telegram from the Central Office at Toronto, copy is typed and sent to the printer. It is promptly posted in public places, and distributed through the mail. Copies are supplied to and fully published by the afternoon newspapers, with the addition of local meteorological conditions. The forecasts, synopses, and reports from other stations contained in the bulletin are highly and justly valued by mariners, builders, shippers, and numerous interests affected by weather changes. The forecasts are immediately repeated to long distance telephone and their information bureaus, as well as to innumerable telephone calls. The day and night storm signal messages from Toronto are immediately forwarded by telephone direct to the display stations at Quaco and Point Lepreaux.



## SESSIONAL PAPER No. 21

## TIME SERVICE OF THE MARITIME PROVINCES.

Observation for time with the meridian telescope have been made nearly every clear night to determine the errors and rates of the standard sidereal clocks. The transit micrometer method has been used entirely, the observation and clock signals being recorded on the chronograph are afterwards scaled and the clock errors computed.

## CLOCKS.

The Rifler sidereal was subjected to considerable disturbance from heavy blasting the nearby site of new post office building, and from this cause could not be depended upon during a greater part of the year. The heavy blasts frequently caused this fine clock to jump from three to ten seconds. The Kullberg sidereal, alongside of the Riefler, in the basement constant temperature clock room was not so decidedly affected, and was depended upon during periods of cloudy weather to carry its rate, checked by frequent observations. In May, a Riefler invar pendulum compensated for air temperature and its stratifications, was fitted to the Kullberg clock; this clock is now giving most satisfactory results. In January, it was moved from the clock room to office and at the end of March the Riefler clock was dismantled to enable the transference of the stone piers to the new building nearing completion. The mean time transmitting clock and the mean time master clock which is used for hourly synchronizing electric clocks in this city have been giving most satisfactory service. Several additions have been made to the number of clocks on the hourly synchronizing circuit, the most important being the tower clock in Trinity church (known as the town clock). This was done by removal of the pendulum and the substitution of a half-minute magnetic release, electrically connected with a sub-master clock in the vestry, which is hourly corrected by the observatory signal.

The daily time signal sent over the Western Union wires for the two minutes ending at 10 a.m. of the 60th meridian is made use of by mariners at our seaports for chronometer comparisons, and is the standard of time for the Maritime provinces. The signal is automatically sent direct from the transmitting clock. At other hours, time signals are transmitted by request through telegraph or telephone, the beats from the clock relay being distinctly audible through long distance telephone. Since early in the year the 10 a.m. signal has been daily transmitted to Prince Edward Island. Formerly this was done at irregular intervals.

## WIRELESS TIME SIGNALS.

The automatic apparatus at Camperdown, N.S., for repeating from land line to wireless has continued in operation. Navigators within the zone of that station are thus able to pick up this signal. Time balls at St. John and Halifax have been dropped each week day at 1 p.m. standard time of the 60th meridian. The synchronizing signal for the Halifax clock which automatically drops the time ball has been sent every week-day morning at 10 a.m., excepting occasions of wire trouble, when it was hourly repeated until satisfactorily received.

I have the honour to be, sir,

Your obedient servant,

D. L. HUTCHINSON,

*Director, St. John Observatory.*



APPENDIX No. 7.

ANNUAL REPORT OF THE MEDICAL SUPERINTENDENT OF THE  
MARINE HOSPITAL SERVICE FOR THE FISCAL  
YEAR 1913-14.

OTTAWA, April 29, 1914.

A. JOHNSTON, Esq.,  
Deputy Minister of Marine and Fisheries,  
Ottawa, Ont.

SIR,—I have the honour to submit the annual report of the transactions of the  
Marine Hospital Service, for the fiscal year ended March 31, 1914.

I have the honour to be, sir,  
Your obedient servant,

C. H. GODIN, M.D.,  
*Medical Superintendent, Marine Hospitals Service.*

Amount of appropriation .....	\$65,000 00
Amount of expenditure.....	54,294 71
Balance not expended,.....	\$10,705 29

EXPENDITURE by Provinces.

Province.	Number of Seamen.	Number of days Treatment.	Total Expenditure.
			\$ cts.
Nova Scotia.....	1,597	10,607	24,710 56
New Brunswick.....	532	2,490	8,306 93
Prince Edward Island.....	221	748	1,979 79
Quebec.....	662	4,353	9,723 31
British Columbia.....	232	3,893	8,597 80
General Account.....	1	49	976 32
Total.....	3,245	22,140	54,294 71



## SESSIONAL PAPER No. 21

TABLE showing the Expenditure for each Port.

Port.	Number of Seamen.	Number of days Treatment.	Total Expenditure.
<i>Nova Scotia.</i>			\$ cts.
Advocate Harbour and Apple River.....	18	25	461 22
Amherst.....	5	47	170 50
Annapolis Royal.....	16	73	226 71
Arichat.....	29	188	378 33
Baddeck.....	11		79 00
Barrington.....	5		300 06
Barton.....	15	1,033	720 84
Bear River.....	4	42	166 72
Bridgetown.....	3		22 00
Bridgewater.....	20		200 00
Canning.....	1		10 00
Canso.....	37	84	435 71
Chester.....	4	21	86 25
Cheticamp.....	130	60	413 75
Cheverie.....	2		16 50
Clark Harbour.....	6	39	270 38
Church Point.....	1		5 50
Clementsport.....	3	7	80 50
Digby.....	35	10	304 30
Economy.....	1		44 75
Freeport, Westport and Tiverton.....	25	950	822 05
Glace Bay.....	6	22	166 50
Halifax: Victoria General Hospital.....	142	2,421	3,664 00
Halifax Board of Health.....	3	44	151 01
Halifax Seamen's Society.....			200 00
Hantsport.....	6		59 75
Ingramport.....	9		29 75
Isaac Harbour.....	1		3 00
Lahave.....	22		376 50
Larry River.....	1		2 50
Liscomb.....	2	17	41 50
Little Bass River.....	1		26 75
Liverpool.....	8		100 00
Lockeport.....	28	298	224 15
Louisburg.....	31	714	1,226 89
Lunenburg.....	14	620	1,375 63
Mahone Bay.....	10		94 25
Marble Mountain.....	1		6 00
Margaree.....	4	28	34 25
Margaretsville.....	6	81	401 50
Meteghan.....	2	49	57 25
Middleton.....	1		168 85
Northport.....	6		12 00
North Sydney.....	388	289	1,399 00
North Sydney Sailors' Institute.....			100 00
Ostrea Lake.....	1		10 00
Parrsboro.....	41		315 10
Pictou.....	94	116	696 00
Ports, Hawkesbury, Hastings, Mulgrave and Point Tupper.....	28	17	320 20
Port Clyde.....	7		36 00
Port Dufferin.....	8		68 75
Port Greville.....	3		150 00
Port Latour.....	27		125 00
Port Maitland.....	1		3 00
Port Morien.....	3		125 00
Port Wade.....	4	35	145 50
Pubnico.....	20	427	801 96
Pugwash.....	8		16 00
River Hebert.....	11		49 50
Salmon River.....	8	110	144 29
Sandy Cove.....	10	150	375 00
Sand Point.....	2		8 00
Sheet Harbour.....	2	4	22 00
Shelburne.....	12	7	107 00
Springhill.....	4	252	380 55
Spry Bay.....	1		32 35



TABLE showing the Expenditure for each Port—*Continued.*

Port.	Number of Seamen.	Number of Days Treatment.	Total Expenditure.
			\$ cts.
St. Peters, L'Ardoise and River Bourgeois.....	23	.....	250 00
Sydney .....	81	2,035	3,929 20
Wallace .....	2	.....	18 00
Walton .....	7	10	55 90
West Bay .....	1	.....	6 00
Wedgeport.....	1	.....	6 00
Weymouth .....	11	57	156 85
Wolfville .....	2	.....	12 00
Windsor.....	40	.....	120 00
Yarmouth .....	74	225	1,089 37
	1,597	10,607	24,710 56
<i>New Brunswick.</i>			
Alma .....	4	.....	78 00
Baie Vert.....	1	.....	5 55
Bathurst. ....	3	.....	150 00
Beaver Harbour .....	2	32	149 28
Buctouche .....	3	.....	6 00
Campbellton .....	36	62	394 29
Cape Tormentine .....	8	.....	150 00
Caraquet. ....	25	.....	42 00
Dalhousie.....	27	.....	250 00
Dorchester.....	4	9	45 63
Douglastown.....	37	268	1,905 09
Grand Harbour .....	10	28	192 25
Harvey and Riverside.....	2	.....	21 00
Hillboro and Hopewell .....	13	.....	150 00
Cape Jacquet River .....	1	.....	11 00
Moncton.....	3	.....	200 00
Northhead. ....	6	2	23 60
Richibucto.....	6	.....	200 00
Sackville.....	1	28	33 75
Shediac.....	6	.....	200 00
Shippegan .....	166	.....	347 50
St. Andrews .....	3	.....	6 50
St. George.....	3	.....	18 00
St. John: General Public Hospital.....	153	1,998	3,007 00
St. John Seamen's Society .....	.....	.....	200 00
St. John.....	1	16	24 00
St. Martin.....	7	47	495 49
St. Stephen .....	1	.....	1 00
	532	2,490	8,306 93
<i>Prince Edward Island.</i>			
Alberton .....	10	.....	43 00
Crapaud.....	1	.....	19 00
Charlottetown Hospital.....	12	252	381 00
Prince Edward Island Hospital.....	12	341	511 50
Georgetown.....	3	25	39 00
Montague.....	9	2	41 75
Murray Harbour.....	11	.....	100 00
New London.....	3	.....	17 30
Rustico .....	2	42	175 65
Souris .....	71	57	343 64
Summerside.....	82	21	271 00
Tignish and Miminegash.....	5	.....	36 95
	221	748	1,979 79



## SESSIONAL PAPER No. 21

TABLE showing the Expenditure for each Port—*Concluded.*

Port.	Number of Seamen.	Number of Days Treatment.	Total Expenditure.
<i>Quebec.</i>			
Batiscan.....	3		27 50
Bonaventure River.....	2		13 00
Carleton.....	4		22 00
Chicoutimi.....	1	3	3 60
Escoumains.....	2		37 00
Gaspé.....	1	7	11 00
Grand Pabos.....	4		28 75
Magdalen Islands.....	4		155 00
Maskinongé .. .	1		11 00
Matane.....	6	4	92 96
Montmagny.....	1		49 50
Montreal: Alexandra Hospital.....	1	53	136 50
" General Hospital.....	281	1,814	2,843 00
" Notre Dame Hospital.. .	124	901	1,371 50
" St. Paul's Hospital.....	1	42	66 00
" Catholic Sailors' Club.....			200 00
" Seamen's Institute.....			200 00
New Richmond.....	4		16 50
Paspebiac and New Carlisle.....	12	8	133 00
Percé .. .	1		8 50
Port Daniel.....	4		10 90
Quebec: Hotel Dieu Hospital.....	12	75	112 50
" Jeffrey Hale Hospital.....	70	1,264	1,926 00
" Eye, Ear and Throat Hospital .. .	1	44	66 00
" Seamen's Society.....			400 00
Rimouski .. .	3		12 00
Sorel.....	55	134	782 00
St. Johns .. .	51		600 00
Ste-Anne des Monts.....	2		14 00
Tadoussac.....	1		20 00
Three Rivers .. .	10	4	353 60
	662	4,353	9,723 31
<i>British Columbia.</i>			
Chemainus.....	15	163	378 00
Ladysmith.....	1	28	41 00
Nanaimo.....	14		600 00
New Westminster.....	3	41	131 00
Ocean Falls.....	4		15 00
Prince Rupert.....	20	131	402 60
Union Bay. ....	4	112	566 00
Vancouver.....	1	5	15 00
Vancouver: St. Paul's Hospital.....	112	2,360	3,945 00
" Strathcona Institute .. .			200 00
Victoria: St. Joseph's Hospital.....	59	1,053	2,104 20
" Seamen's Institute .. .			200 00
	233	3,893	8,597 80



TABLE showing Expenditure for Treatment, Board, Supplies, etc.

	Nova Scotia.	New Brunswick.	Prince Edward Island.	Quebec.	British Columbia.	General Account.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Board in hospitals and private houses. ....	7,806 59	3,372 88	1,019 64	6,519 70	6,076 20	24 50
Medical and surgical treatment. ....	3,059 59	1,189 00	303 15	1,118 45	491 60	35 00
Medical officers' and keepers' salaries. ....	9,222 50	2,350 00	650 00	1,075 00	1,600 00	.....
Fuel. ....	779 30	113 86	.....	.....	.....	.....
Water. ....	34 00	.....	.....	.....	.....	.....
Light. ....	16 11	.....	.....	.....	.....	.....
Supplies. ....	560 59	33 00	.....	.....	.....	.....
Telephone service. ....	148 01	21 93	.....	.....	.....	.....
Drugs, instruments, etc. ....	201 00	.....	.....	.....	.....	.....
Repairs and maintenance. ....	1,662 99	902 30	.....	.....	.....	.....
Burials. ....	50 00	10 00	.....	51 16	30 00	.....
Transportation. ....	120 65	4 00	.....	153 00	.....	602 05
Special nursing. ....	572 73	109 96	7 00	6 00	.....	.....
Grants. ....	300 00	200 00	.....	800 00	400 00	.....
Medical assistance. ....	175 00	.....	.....	.....	.....	.....
Express and freight. ....	1 50	.....	.....	.....	.....	6 89
Printing and stationery. ....	.....	.....	.....	.....	.....	307 88
	24,710 56	8,306 93	1,979 79	9,723 31	8,597 80	976 32

TABLE showing Amount of Salaries paid to the Medical Officers and Keepers during the Fiscal Year 1913-14.

Nova Scotia.	\$ cts.		\$ cts.
Advocate Harbour and Apple River—Medical officer. ....	262 50	Windsor—Medical officer. ....	120 00
Annapolis Royal—Medical officer. ....	160 00	Yarmouth—Medical officer. ....	400 00
Arichat—Medical officer. ....	300 00		9,222 50
Barrington—Medical officer. ....	300 00	New Brunswick.	
Barton—Medical officer. ....	250 00	Bathurst—Medical officer. ....	150 00
Bear River—Medical officer. ....	150 00	Campbellton—Medical officer. ....	350 00
Bridgewater—Medical officer. ....	200 00	Cape Tormentine—Medical officer. ....	150 00
Canso—Medical officer. ....	375 00	Dalhousie—Medical officer. ....	250 00
Clark Harbour—Medical officer. ....	250 00	Douglastown—Medical officer. ....	450 00
Digby—Medical officer. ....	250 00	Keeper. ....	250 00
Keeper. ....	50 00	Hillsboro and Hopewell Cape—Medical officer. ....	150 00
Freeport, Westport and Tiverton—Medical officer. ....	400 00	Moncton—Medical officer. ....	200 00
Glace Bay—Medical officer. ....	150 00	Richibucto—Medical officer. ....	200 00
Liverpool—Medical officer. ....	100 00	Shediac—Medical officer. ....	200 00
Lockeport—Medical officer. ....	100 00		2,350 00
Louisburg—Medical officer. ....	250 00	Prince Edward Island.	
Keeper. ....	300 00	Murray Harbour—Medical officer. ....	100 00
Lunenburg—Medical officer. ....	500 00	Souris—Medical officer. ....	300 00
Keeper. ....	200 00	Summerside—Medical officer. ....	250 00
North Sydney—Medical officer. ....	750 00		650 00
Parrsboro—Medical officer. ....	300 00	Quebec.	
Pictou—Medical officer. ....	400 00	Paspebiac and New Carlsisle—Medical officer. ....	125 00
Watchman. ....	180 00	St. Johns—Medical officer. ....	600 00
Port Greville—Medical officer. ....	150 00	Three Rivers—Medical officer. ....	350 00
Port Latour—Medical officer. ....	125 00		1,075 00
Port Hawkesbury, Hastings, Mulgrave and Point Tupper—Medical officer. ....	300 00	British Columbia.	
Port Morien—Medical officer. ....	125 00	Nanaimo—Medical officer. ....	600 00
Pubnico—Medical officer. ....	250 00	Union Bay—Medical officer. ....	400 00
Sandy Cove—Medical officer. ....	300 00	Victoria—Medical officer. ....	600 00
Shelburne—Medical officer. ....	100 00		1,600 00
St. Peter, L'Ardoise and River Bourgeois—Medical officer. ....	250 00		
Sydney—Medical officer. ....	500 00		
Keeper. ....	300 00		
Weymouth—Medical officer. ....	125 00		
		Total. ....	



## SESSIONAL PAPER No. 21

TABLE showing expenditure for Physicians' Services and Travelling Expenses, Drugs and Board.

Port.	Physicians' Services.	Physicians' Travelling Expenses.	Drugs.	Board.	Total Expenditure
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
<i>Nova Scotia.</i>					
Advocate Harbour and Apple River . . .	84 00	11 00	49 50	13 02	157 52
Amherst. . . . .	117 00	16 50	3 00	34 00	170 50
Annapolis Royal . . . . .	22 00		3 00	41 71	66 71
Arichat . . . . .				78 33	78 33
Baddeck. . . . .	17 00	32 00	30 00		79 00
Barton. . . . .	7 00		7 00	442 49	456 49
Bear River. . . . .				16 72	16 72
Bridgetown. . . . .	9 00		13 00		22 00
Canning . . . . .	1 00	9 00			10 00
Canso . . . . .				60 71	60 71
Chester. . . . .	42 00	21 00	8 25	15 00	86 25
Cheticamp. . . . .	226 00	28 00	134 75	25 00	413 75
Cheverie. . . . .	5 00	10 00	1 50		16 50
Church Point. . . . .	2 00	2 00	1 50		5 50
Clark's Harbour . . . . .				20 38	20 38
Clementsport. . . . .	13 00	60 00	4 50	3 00	80 50
Digby . . . . .				4 30	4 30
Economy. . . . .	12 00	24 00	8 75		44 75
Freeport, Westport and Tiverton. . . . .				407 05	407 05
Glace Bay . . . . .				16 50	16 50
Halifax Board of Health. . . . .	128 44			20 50	151 01
Halifax Victoria General Hospital. . . . .				3,631 50	3,631 50
Hantsport. . . . .	35 00	8 00	16 75		59 75
Ingramport. . . . .	10 00	15 00	4 75		29 75
Lahave. . . . .	133 00	113 00	120 50		366 50
Isaac Harbour . . . . .	2 00		1 00		3 00
Larry River . . . . .	1 00		1 50		2 50
Liscomb . . . . .	5 00	23 00	5 00	8 50	41 50
Little Bass River . . . . .	10 00	13 00	3 75		26 75
Lockeport. . . . .				115 58	115 58
Louisburg. . . . .	5 00			278 60	283 60
Lunenburg. . . . .				310 00	310 00
Mahone Bay. . . . .	35 00	47 00	12 25		94 25
Marble Mountain . . . . .	2 00	4 00			6 00
Margaree . . . . .	19 25	5 00		10 00	34 25
Margaretsville. . . . .	39 00	160 00	35 00	40 50	274 50
Meteghan . . . . .	12 00	24 00	3 75	17 50	57 25
Middleton. . . . .	26 00	130 00	12 85		168 85
Northport. . . . .	8 00		4 00		12 00
North Sydney . . . . .	210 00			289 00	499 00
Ostrea Lake. . . . .	1 00	9 00			10 00
Pictou . . . . .				116 00	116 00
Port Clyde . . . . .	20 00	6 00	10 00		36 00
Port Dufferin. . . . .	22 00	36 00	10 75		68 75
Port Maitland. . . . .	2 00		1 00		3 00
Ports Hawkesbury, Hastings, Mulgrave and Point Tupper. . . . .				16 50	16 50
Port Wade. . . . .	15 00	105 00	8 00	17 50	145 50
Pubnico . . . . .	12 00	6 00	4 30	88 50	110 80
Pugwash . . . . .	8 00		8 00		16 00
River Hebert. . . . .	29 00	6 00	14 25		49 25
Salmon River. . . . .	24 00	64 00	16 00	39 29	144 29
Sandy Cove. . . . .				75 00	75 00
Sand Point. . . . .	2 00	5 00	1 00		8 00
Sheet Harbour. . . . .	7 00	4 50	2 50	3 00	17 00
Shelburne . . . . .				7 00	7 00
Springhill . . . . .				378 00	378 00
Spry Bay. . . . .	6 00	24 00	2 35		32 35
Sydney. . . . .				989 20	989 20
Wallace. . . . .	14 00		4 00		18 00
Walton . . . . .	19 00	25 00	1 90	10 00	55 90
West Bay . . . . .	5 00		1 00		6 00
Wedgeport. . . . .	2 00	4 00			6 00
Weymouth . . . . .				31 85	31 85
Wolfville. . . . .	11 00		1 00		12 00
Yarmouth. . . . .				134 79	134 79
	1,436 69	1,050 00	572 90	7,806 59	10,866 18



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TABLE showing expenditure for Physicians' Services and Travelling Expenses, Drugs and Board.—*Continued.*

Port.	Physicians' Services.	Physicians' Travelling Expenses.	Drugs.	Board.	Total Expenditure
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
<i>New Brunswick.</i>					
Alma.....	5 00	55 00	18 00		78 00
Baie Verte.....	3 00		2 55		5 55
Beaver Harbour.....	59 00		40 00	13 72	112 72
Buctouche.....	3 00		3 00		6 00
Campbellton.....				44 29	44 29
Caraquet.....	20 00		22 00		42 00
Dorchester.....	22 00	11 00	6 20	6 43	45 63
Douglastown.....				134 00	134 00
Grand Harbour.....	72 00	65 00	43 25	12 00	192 25
Harvey and Riverside.....	3 00	15 00	3 00		21 00
Jacquet River.....	1 00	9 00	1 00		11 00
Northhead.....	8 00	8 00	4 80	2 80	23 60
Sackville.....	11 00		2 75	20 00	33 75
Shippigan.....	124 50	8 50	214 50		347 50
St. Andrews.....	4 00		2 50		6 50
St. George.....	6 00	2 00	10 00		18 00
St. John General Hospital.....				2,997 00	2,997 00
St. John.....	12 00			12 00	24 00
St. Martin.....	53 00	224 00	10 45	130 64	418 09
St. Stephen.....	1 00				1 00
<i>Prince Edward Island.</i>					
	407 50	397 50	384 00	3,372 88	4,598 88
Alberton.....	12 00	0 50	30 50		43 00
Crapaud.....	7 00	7 00	5 00		19 00
Charlottetown Hospital.....	3 00			378 00	381 00
Prince Edward Island Hospital.....				511 50	511 50
Georgetown.....	20 00		8 50	10 50	39 00
Montague.....	28 00		11 75	2 00	41 75
New London.....	9 00		8 30		17 30
Rustico.....	18 00	90 00	7 65	60 00	175 65
Souris.....				36 64	36 64
Summerside.....				21 00	21 00
Tignish and Miminegash.....	15 00	10 00	11 95		36 95
<i>Quebec.</i>					
	112 00	107 50	83 65	1,019 64	1,322 79
Batiscan.....	18 00	3 00	6 50		27 50
Bonaventure River.....	3 00	3 00	7 00		13 00
Carleton.....	11 00		11 00		22 00
Chicoutimi.....				3 60	3 60
Escoumains.....	2 00	24 00	11 00		37 00
Gaspé.....				4 00	4 00
Grand Pabos.....	6 00	15 00	7 75		28 75
Magdalen Islands.....	23 00	123 00	9 00		155 00
Maskinonge.....	11 00				11 00
Matane.....	22 00	22 00	17 80	6 00	67 80
Montreal General Hospital.....				2,721 00	2,721 00
Notre Dame Hospital.....				1,351 50	1,351 50
Alexandra Hospital.....			1 00	132 50	133 50
St. Paul Hospital.....				63 00	63 00
New Richmond.....	5 00	5 00	6 50		16 50
Paspebiac.....				8 00	8 00
Perce.....	7 00		1 50		8 50
Port Daniel.....	4 00	1 00	5 90		10 90
Quebec Hotel Dieu.....				112 50	112 50
Jeffrey Hale Hospital.....				1,896 00	1,896 00
Quebec Eye and Ear Hospital.....				66 00	66 00
Rimouski.....	3 00	6 00	3 00		12 00
Sorel.....	468 70	13 00	148 30	152 00	782 00
Ste. Anne des Monts.....	4 00		10 00		14 00
St. Thomas Montmagny.....	27 00	12 00	10 50		49 50
Tadoussac.....	1 00	14 00	5 00		20 00
Three Rivers.....				3 60	3 60
	615 70	241 00	261 75	6,519 70	7,638 15



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TABLE showing expenditure for Physicians' Services and Travelling Expenses, Drugs and Board.—*Concluded.*

Port.	Physicians' Services.	Physicians' Travelling Expenses.	Drugs.	Board.	Total Expenditure
<i>British Columbia.</i>	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Chemainus .....	192 00		23 00	163 00	378 00
Ladysmith.....				41 00	41 00
New Westminster.....	90 00			41 00	131 00
Ocean Falls.....	15 00				15 00
Prince Rupert.....	147 00		14 60	241 00	402 60
Union Bay.....				166 00	166 00
Vancouver General Hospital.....	10 00			5 00	15 00
St. Paul's Hospital.....				3,945 00	3,945 00
Victoria—St. Joseph's Hospital .....				1,474 20	1,474 20
	454 00		37 60	6,076 20	6,567 80
GENERAL ACCOUNT.					
General account.....	35 00			24 50	59 50
Total.....	35 00			24 50	59 50

DETAILED EXPENDITURE FOR FUEL.

<i>Nova Scotia—</i>				
Louisburg Marine Hospital.....			\$	196 00
Lunenburg " " .....				210 50
Sydney " " .....				222 00
Yarmouth " " .....				150 80
				\$ 779 30
<i>New Brunswick—</i>				
Douglastown Marine Hospital.....			\$	113 86
				113 86
Total expenditure.....				\$ 893 16

DETAILED EXPENDITURE FOR WATER SUPPLY.

<i>Nova Scotia—</i>			
Sydney Marine Hospital.....			34 00

DETAILED EXPENDITURE FOR TELEPHONE SERVICE.

<i>Nova Scotia—</i>			
Lunenburg Marine Hospital.....		\$	27 00
Sydney " .....			85 97
Yarmouth " .....			35 04
			148 01
<i>New Brunswick—</i>			
Douglastown Marine Hospital...			21 93
			21 93
Total expenditure.....			\$ 169 94

DETAILED EXPENDITURE FOR REPAIRS AND MAINTENANCE.

<i>Nova Scotia—</i>			
Louisburg Marine Hospital.....		\$	14 98
Lunenburg " .....			118 33
Sydney " .....			1,303 62
Yarmouth " .....			226 06
Total expenditure.....			\$ 1,662 99
<i>New Brunswick—</i>			
Douglastown Marine Hospital.....		\$	902 30
			902 30
Total expenditure.....			\$ 2,565 29



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GRANTS TO SEAMEN'S INSTITUTES.

<i>Nova Scotia—</i>		
Seamen's Society, Halifax, N.S . . . . .	\$	200 00
North Sydney Institute.....		100 00
<i>New Brunswick—</i>		
Seamen's Mission Society, St. John.....		200 00
<i>Quebec—</i>		
Seamen's Institute, Montreal.....		200 00
Catholic Sailor's Club, Montreal.....		200 00
Seamen's Institute, Quebec.....		400 00
<i>British Columbia—</i>		
Seamen's Society (Victoria).....		200 00
Strathcona Institute, Vancouver.....		200 00
Total expenditure.....	\$	1,700 00

DETAILED EXPENDITURE FOR TRANSPORTATION.

<i>Nova Scotia—</i>		
Advocate Harbour.....	\$	41 20
Barton.....		14 35
Halifax Board of Health.....		2 00
Halifax Victoria General Hospital.....		32 50
Margaretsville.....		6 00
Parrsboro.....		15 10
Point Tupper.....		3 70
River Hebert.....		25
Sheet Harbour.....		3 00
Springhill.....		2 55
		\$ 120 65
<i>New Brunswick—</i>		
St. Martins.....		4 00 4 00
<i>Quebec—</i>		
Gaspe.....		5 00
Montreal Alexandra Hospital..		3 00
Montreal General Hospital.....		122 00
Montreal Notre Dame.....		20 00
Montreal St. Paul's Hospital.....		3 00 \$ 163 00
Total expenditure.....		\$ 287 65

DETAILED EXPENDITURE FOR SPECIAL NURSING

<i>Nova Scotia—</i>		
Lockeport . . . . .	\$	8 57
Margaretsville.....		121 00
Pubnico.....		441 16
Sheet Harbour.....		2 00
		\$ 572 73
<i>New Brunswick—</i>		
St. Martin's.....		109 96 \$ 109 96
<i>Prince Edward Island—</i>		
Souris.....	\$	7 00 7 00
<i>Quebec—</i>		
Gaspe.....		2 00
Matane.....		4 00 6 00
Total expenditure.....		\$ 696 69

DETAILED EXPENDITURE FOR BURIALS.

<i>Nova Scotia—</i>		
Sydney.....		50 00 50 00
<i>New Brunswick—</i>		
St. John.....		10 00 10 00
<i>Quebec—</i>		
Matane.....		21 16
Quebec.....		30 00
		51 16
<i>British Columbia—</i>		
Victoria.....		30 00 30 00
Total expenditure.....		\$ 141 16

DETAILED EXPENDITURE FOR MEDICAL ASSISTANCE.

<i>Nova Scotia—</i>		
Freeport.....		15 00
Lahave.....		10 00
North Sydney.....		150 00
Total expenditure.....		\$ 175 00



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## DETAILED EXPENDITURE FOR LIGHT.

<i>Nova Scotia—</i>		
Sydney.....	\$ 16 11	\$ 16 11

## DETAILED EXPENDITURE FOR FURNITURE, BEDDING, AND OTHER SUPPLIES.

<i>Nova Scotia—</i>		
Louisburg Marine Hospital.....	\$ 182 31	
Lunenburg " " .....	9 80	
Sydney " " .....	318 45	
Yarmouth " " .....	50 03	
		\$ 560 59
<i>New Brunswick—</i>		
Douglastown Marine Hospital.....	33 00	33 00
Total.....		\$ 593 59

## DETAILED EXPENDITURE FOR DRUGS, MEDICINES, ETC.

<i>Nova Scotia—</i>		
Sydney Marine Hospital.....	\$ 109 85	
Yarmouth " " .....	91 15	
Total.....		\$ 201 00

## DETAILED EXPENDITURE FOR EXPRESS AND FREIGHT CHARGES.

<i>Nova Scotia—</i>		
Yarmouth .....	\$ 1 50	
General account.....	6 89	
Total.....		\$ 8 39

## MISCELLANEOUS.

Printing and stationery.....	\$ 307 88	
Medical superintendent's travelling expenses.....	602 05	
Total.....		\$ 909 93

## TABULAR STATEMENT showing Diseases for which Seamen received Treatment during 1913-14.

GENERAL DISEASES, 742.			
Measles.....	15	Gonorrhea.....	117
Scarlet fever..	4	Rheumatism.....	213
Diphtheria.....	3	Gout.....	2
Influenza.....	86	Scurvy.....	3
Enteric fever.....	59	Anaemia .....	12
Choleraic diarrhoea . . . . .	4	Diabetes Mellitus.....	4
Dysentery.....	20	Effects of heat.....	1
Beriberi.....	4	Effects of cold.....	4
Malarial fever.....	22	Effects of foreign bodies.....	13
Erysipelas.....	10	General debility.....	25
Septicemia.....	9	Congenital malformation.....	1
Tubercle.....	3	New growths malignant.....	2
Syphilis.....	83	New growths non-malignant.....	3
Mumps .....	3	Purpura.....	2
Scabies.....	9	Cyst.....	7
Taenia.....	2	Hemophilia.....	2
Alcoholism.....	5	Total.....	742



LOCAL DISEASES, 1,774.

Diseases of the nervous system—

1. Of the nerves, 10—	
Neuritis.....	8
Multiple neuritis.....	2
2. Of the spinal cord and membranes, 6—	
Inflammation.....	1
Degeneration of lateral column ..	1
Locomotor ataxia.....	4
3. Of the brain and membranes, 3—	
Hemorrhage.....	2
Meningitis .....	1
4. Functional nervous diseases and other diseases of undetermined nature, 65—	
Apoplexy.....	2
Paralysis.....	2
Paresis.....	1
Hemiplegia.....	1
Epilepsy .....	9
Spasm.....	1
Vertigo.....	1
Headache.....	9
Neurasthenia .....	10
Neuralgia.....	27
Hysterics.....	2
5. Mental diseases, 1—	
Insanity.....	1

Diseases of the eye, 81—

Conjunctivitis.....	51
Keratitis .....	1
Ulcer cornea .....	10
Iritis.....	10
Blepharitis .....	2
Abscess of eyelid .....	1
Abscess of lacrymal sac .....	2
Optic neuritis.....	1
Amblyopia.....	1
Squint.....	2

Diseases of the ear, 33—

Inflammation of the external meatus.....	2
Cerumen .....	2
Otitis media .....	25
Axilliary abscess.....	4

Diseases of the Nose, 10—

Inflammation of septum.....	1
Necrosis .....	2
Inflammation of sinesus .....	5
Inflammation of naso-pharynx .....	2

Diseases of the circulatory system, 58—

Endocarditis .....	6
Pericarditis.....	2
Valvular diseases .....	25
Aneurism .....	1
Angina pectoris.....	5
Syncope .....	1
Arteritis.....	5
Thrombosis .....	1
Phelbitis .....	2
Varix .....	10

Diseases of the respiratory system, 335—

Laryngitis.....	23
Rhinitis .....	10
Bronchitis .....	189



## SESSIONAL PAPER No. 21

Diseases of the respiratory system—*Continued*.

Asthma .....	9
Congestion of lungs .....	11
Hemorrhage of lungs .....	6
Pneumonia ... ..	37
Broncho-pneumonia .....	2
Abscess of lungs .....	2
Phthitisis .....	16
Pleurisy .....	29
Oedema of lungs .....	1

## Diseases of the digestive system, 561—

Inflammation of the lips .....	2
Stomatitis .....	11
Dental caries .....	17
Toothache .....	54
Alveolar abscess .....	7
Pharyngitis .....	12
Gastritis .....	59
Tonsillitis .....	63
Post pharyngeal abscess .....	1
Ulcer of stomach .....	3
Hemorrhage of stomach .....	3
Cancer of stomach .....	3
Indigestion .....	23
Gastralgia .....	11
Enteritis .....	49
Typhlitis .....	2
Appendicitis .....	25
Colitis .....	5
Duodenitis .....	2
Intestinal obstruction .....	4
Constipation .....	21
Diarrhoea .....	19
Fistula in ano .....	4
Ulcer of rectum .....	2
Hemorrhoids .....	27
Hedatitis .....	5
Jaundice .....	3
Abscess of liver .....	1
Cancer of liver .....	1
Calculi of liver .....	2
Biliary of colic .....	5
Hernia .....	37
Peritonitis .....	6
Dyspepsia .....	61
Dropsy .....	1

## Diseases of the lymphatic glands, 31—

Adenitis .....	31
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## Diseases of the urinary system, 154—

Nephritis .....	19
Bright's disease .....	8
Calculi of kidneys .....	2
Haematuria .....	5
Albuminuria .....	3
Lithuria .....	1
Pyelitis .....	2
Cystitis .....	29
Renal colic .....	2
Urethritis .....	7
Stricture .....	7
Prostatitis .....	1
Phimosis .....	11
Paraphimosis .....	1
Epididymitis .....	3
Chancroids .....	20
Orchitis .....	17
Varicocele .....	11
Hydrocele .....	5



Diseases of the organs of locomotion, 116—

Ostetitis.....	5
Periostetis.....	2
Caries.....	3
Bursitis.....	22
Synovitis.....	12
Hygroma.....	1
Myalgia.....	9
Lumbago.....	59
Sciatica.....	13

Diseases of the connective tissues, 139—

Cellulitis.....	61
Abscess.....	75
Gangrene.....	2
Oedema.....	1

Diseases of the skin, 171—

Erythema.....	2
Urticaria.....	5
Eczema.....	29
Impetigo.....	4
Pruritis.....	2
Sycosis.....	2
Herpes.....	13
Dermatitis.....	1
Acne.....	1
Seborrhea.....	1
Chilblain.....	2
Ulcers.....	37
Boils.....	35
Carbuncle.....	17
Whitlow.....	6
Prurigo.....	2
Ringworm.....	3
Frost bite.....	5
Psoriasis.....	4

INJURIES—729.

General injuries, 71—

Burns and scalds.....	64
Multiple injuries.....	3
Shock.....	2
Drowning.....	1
Strangulation.....	1

Local injuries, 658 —

Fracture of skull.....	1
Concussion of brain.....	1
Fracture of ribs.....	30
Wounds of head.....	27
Wounds of eyes.....	19
Wounds of ear.....	3
Wounds of face.....	17
Wounds of chest.....	17
Wounds of back.....	9
Wounds of upper extremities.....	149
Sprained wrist.....	20
Wounds of lower extremities.....	101
Sprained ankle.....	18
Fracture of Humerus.....	17
Fracture of radius.....	9
Fracture of umla.....	5
Fracture of radius and umla.....	11
Fracture of clavicle.....	9
Fracture of scapula.....	4
Fracture of finger bones.....	17
Fracture of femur.....	19
Fracture of tibia.....	13
Fracture of fibula.....	9
Fracture of tibia and fibula.....	11
Fracture of patella.....	5
Fracture of toes.....	15
Fracture of bones of nose.....	4
Fracture of lower maxillary.....	



## SESSIONAL PAPER No. 21

Local Injuries—*Concluded*.

Dislocation of shoulder.....	19
Dislocation of clavicle.....	9
Dislocation of wrist.....	3
Dislocation of hip.....	6
Dislocation of patella.....	1
Dislocation of knee.....	2
Dislocation of fingers.....	15
Malingering.....	5
Undiagnosed.....	5
Incomplete reports.....	21

Total number sick mariners treated during the year 1913-14. .... 3,245

## Number of cheques issued during the year 1913-14—

Nova Scotia.....	647
New Brunswick.....	124
Prince Edward Island.....	52
Quebec.....	107
British Columbia.....	66
General Account.....	19
	<hr/> 1,015

During the year 1913-14, the number of letters sent by this office was 1,722; memoranda, 445.

C. H. GODIN, M.D.

OTTAWA, April 29, 1914.



APPENDIX No. 8.

REPORT OF THE WRECK COMMISSIONER.

OTTAWA, May 1, 1914.

A. JOHNSTON, Esq.,  
Deputy Minister of Marine and Fisheries,  
Ottawa.

SIR,—I have the honour to submit my annual report of investigations and inquiries held during the fiscal year 1913-14, into the causes of wrecks and casualties, as well as statements of wrecks and casualties reported as having occurred to British, Canadian, and foreign vessels in Canadian waters, and to Canadian vessels in other waters, from January 1, 1913, to December 31, 1913, and of those reported as having occurred in inland waters during the same period.

Captain John D. Macpherson was appointed during the year to the position of wreck commissioner for British Columbia, left vacant by the death of Captain James Gaudin.

Formal investigations during the year.. . . .	24
Preliminary inquiries during the year.. . . .	7
Departmental inquiries during the year.. . . .	2
Total.. . . .	33

I am, sir,  
Your obedient servant,  
H. St. G. LINDSAY,  
*Dominion Wreck Commissioner.*



## SESSIONAL PAPER No. 21

STATEMENT of Investigations held in Canada into Wrecks and Casualties which occurred to Canadian, British and Foreign Vessels in Canadian Waters during the fiscal year 1913-14.

Name of Ship.	Registered Port and No.	Remarks.
"Actic" (Lower Traverse Lightship).	Ottawa, 116,992.....	On May 23, collided with Clamb in St. Louise basin, Quebec. Departmental investigation was held at Quebec, May 30, by Commander Lindsay. <i>Finding.</i> —Engines moved ahead instead of astern. Engineer cautioned to be more careful in future.
"Actic" (Lower Traverse Lightship).	Ottawa, 116,992 .....	On October 3, broke away from her moorings. Departmental investigation was held at Lower Traverse on October 29, by Commander Lindsay. <i>Finding.</i> —No one to blame. Anchor chains broke in heavy gale.
"Acadian," SS.....	Glasgow, 124,258.....	On November 8, stranded near Sulphur island, lake Huron. Formal investigation was held at Toronto on January 30, by Commander Lindsay. <i>Finding.</i> —Stranding caused by error of judgment on part of master, who is severely censured; but whose certificate is not dealt with on account of his conduct <i>re</i> salving and refloating his vessel.
"Bendu," SS., collided with tug "Canso."	Liverpool, 123,995.....	On July 4, collided with tug <i>Canso</i> in Restigouche river, N.B. Preliminary inquiry was held at Montreal on September 12, by Commander Lindsay. <i>Finding.</i> —Accident due to error of judgment on part of master of tug <i>Canso</i> , in miscalculating space for turning his vesssl.
"Bridgeport," SS.....	London, 135,126.....	On November 1, left Sydney, C.B., for Montreal, Que., with cargo of coal, and has not since been heard of. Formal investigation opened at Sydney, C.B., March 26, by Commander Lindsay. Investigation not yet completed.
"Chilter Range," SS.....	Hartlepool, 132,811.....	On May 1, struck iceberg in mid-Atlantic. Formal investigation opened at Montreal on May 14, by Commander Lindsay, but found unnecessary after evidence of master was taken.
"Canada," SS. ....	Trieste, Austria .....	On May 30, stranded at St. Antoine range lights, St. Lawrence river. Preliminary inquiry was held at Montreal on August 20, by Captain Riley. <i>Finding.</i> —No one to blame, formal investigation unnecessary.
"Canso," tug, collided with "Bendu," SS.	Yarmouth, N.S., 126,803	See under <i>Bendu</i> .
"Crown of Cordova," SS., collided with "Lady of Gaspe."	Glasgow, G.B., 112,809..	On July 28, collided with <i>Lady of Gaspe</i> at Cap de la Madeleine, St. Lawrence river. Formal investigation was held at Quebec on August 7, 8, 12, 13 and 14, before Commander Lindsay. <i>Finding.</i> — <i>Lady of Gaspe</i> alone to blame, master of <i>Lady of Gaspe</i> severely censured, and her second officer's certificate cancelled on account of his cowardly conduct in seeking self-preservation at time of collision. Master's certificate not dealt with.
"Cobequid," SS. ....	London, 98,866 .....	On January 13, on Trinity ledge, bay of Fundy. Stranded and was subsequently lost. Formal investigation held at Halifax, February 19 and 20, before Commander Lindsay. <i>Finding.</i> —Accident due to error of judgment on part of master, who is severely censured, but whose certificate is not dealt with on account of the very efficient manner in which everything was carried out on board for safety of passengers and crew.



5 GEORGE V., A. 1915

STATEMENT of Investigations held in Canada into Wrecks and Casualties which occurred to Canadian, British and Foreign Vessels in Canadian Waters during the fiscal year 1913-14.—*Continued.*

Name of Ship	Registered Port and No.	Remarks.
"City of Sydney," SS.....	Montreal, 115,274.....	On March 17, stranded on Shag rock, N.S. Formal investigation was held at Halifax on March 23 and 24 before Commander Lindsay. <i>Finding.</i> —Error of judgment on part of master, who is censured.
"Freia," sailing vessel ....	(Norwegian) .....	On May 30, stranded and lost near Sunday point, N.S. Formal investigation held at Halifax on June 5, before Commander Lindsay. <i>Finding.</i> —No one to blame. Strong gale cause of accident.
"Fairmount," SS., collided with "Kenora," SS.	Montreal, 112,276.....	On July 12, collided in Montreal harbour. Formal investigation held at Montreal, August 28 and September 4, before Commander Lindsay. <i>Finding.</i> — <i>Kenora</i> alone to blame. Accident due to mistake of engineer in charge of <i>Kenora</i> in putting engines full speed ahead when master's orders were full speed astern. Both masters exonerated.
"Gerald Turnbull," SS.....	Cardiff, G.B., 132,876...	On May 19, stranded on Gannet dry ledge, N.S. Formal investigation held at Halifax on June 6, before Commander Lindsay. <i>Finding.</i> —Accident due to overconfidence of master in mistaking lights. His certificate suspended for six months.
"Kenora," SS. ....	Glasgow, G.B., 124,235..	On May 5, stranded near Dorval, lake St. Louis. Formal investigation held at Montreal on June 13, before Commander Lindsay. <i>Finding.</i> —No one to blame, accident due to smoke obscuring range lights astern.
"Kenora," SS., collided with "Fairmount," SS.	Glasgow, G.B., 124,235..	See under <i>Fairmount</i> .
"Lady of Gaspe," SS., collided with "Crown of Cordova," SS.	Quebec, 78,554.....	See under <i>Crown of Cordova</i> .
"Lake Manitoba," SS.....	Liverpool, G.B., 113,497.	On July 29, stranded on Isle of Orleans, St. Lawrence river. Formal investigation held at Montreal on August 5, before Commander Lindsay. <i>Finding.</i> —Casualty due to negligence of pilot, who disregarded rules of road, and whose license was suspended for balance of season. Master and officers in charge exonerated from all blame.
"Mastodon," dredge collision "Princess Charlotte," SS.	Renfrew, N.B., 129,529..	On January 28, collided in Vancouver narrows, B.C. Formal investigation held at Vancouver, April 25, 1913, by Captain Robertson. <i>Finding.</i> —No one to blame. Collision due to force of flood tide sending <i>Princess Charlotte</i> against <i>Mastodon's</i> bows.
"Majestic," SS.....	Collingwood, Ont., 100,950.	On June 4, stranded in lake St. Louis. Formal investigation held at Montreal on June 17 and 24, before Commander Lindsay. <i>Finding.</i> —Master was not justified in accepting two-blast signal from tug <i>St. Louis</i> , and was censured and warned to be more careful in future when navigating in narrow waters.
"Maia," SS. ....	German.....	On June 8, struck on Seal island, N.S. Formal investigation held at Halifax on July 9, before Commander Lindsay. <i>Finding.</i> —Master to blame for not having taken into consideration state and set of tide when setting his course, and not verifying his position by using lead. Certificate not dealt with, as court had no jurisdiction over same; but evidence and finding referred to German Government for action.



## SESSIONAL PAPER No. 21

STATEMENT of Investigations held in Canada into Wrecks and Casualties which occurred to Canadian, British and Foreign Vessels in Canadian Waters during the fiscal year 1913-14.—*Continued.*

Name of Ship.	Registered Port and No.	Remarks.
"Megantic," SS.....	Liverpool, G.B., 127,981.	On May 27, stranded near Verchères, St. Lawrence river. Preliminary inquiry held at Montreal on June 23, before Captain Riley. <i>Finding.</i> —No one to blame. Formal investigation not found necessary.
"Mikado," SS., collision with launch.	Halifax, N.S., 111,426...	On June 7, collided in Halifax harbour with a motor launch, and one person drowned from launch. Formal investigation at Halifax on July 9, before Commander Lindsay. <i>Finding.</i> —Master exonerated from blame. Casualty caused by person in charge of motor launch not paying attention as to which direction his boat was going after she left the breakwater.
"Mount Temple," SS.....	Liverpool, G.B., 113,496.	On Sept. 24, grounded in Montreal harbour. Formal investigation held at Montreal on October 1 and 8, before Commander Lindsay. <i>Finding.</i> —Stranding entirely due to error of judgment on part of pilot, who is severely censured and condemned to pay his own personal expenses.
"Princess Charlotte," SS., collision "Mastodon" Dredge.	Victoria, B.C., 126,236...	<i>See under Mastodon.</i>
"Point Hope," SS., collision, — "Despatch," American SS.	.....	On Oct. 25, collided near Victoria inner harbour. Formal investigation held at Victoria, B.C., on December 3, before Captain Macpherson. <i>Finding.</i> —Collision entirely due to careless navigation of those in charge of <i>Despatch</i> . Copy of evidence and finding referred to United States Government for action.
"Prince George," SS....	Newcastle, G.B., 129,748	On December 20, stranded in First narrows, Vancouver, B.C. Formal investigation held at Victoria, B.C., before Captain Macpherson on January 22. <i>Finding.</i> —No one to blame. Mistook lights.
"Point Grey," tug, collided with scow.	Vancouver, B.C., 130,917	On December 9, collided in Vancouver harbour, B.C. Preliminary inquiry held at Vancouver, January 7 and 8, before Captain Macpherson. <i>Finding.</i> —Accident caused by scow attached to <i>James Tuft</i> —American vessel—being in improper place alongside of her, when loading under existing weather conditions.
"St. Laurent," SS., "Valleyfield," SS., collision.	Montreal, Que., 280,735.	On July 6, collided in Montreal harbour. Preliminary inquiry held at Montreal on July 28, by Captain Riley. <i>Finding.</i> —Accident due to lack of sufficient speed on <i>Valleyfield</i> to counteract the force of the current which struck her port bow after she crossed an ocean steamer's bow under reduced speed.
"Skookum," SS., "Castlegar" tug, collision.	Victoria, B.C., 134,028... Vancouver, B.C., 130,556	On November 4, collided on Okanagan lake. Preliminary inquiry held at Penticton, B.C., on February 5, by Captain Macpherson. <i>Finding.</i> —Both vessels to blame. Formal investigation unnecessary.
"Tees," SS.....	Victoria, B.C., 95,929....	On May 3, stranded in First narrows, Alberni canal, B.C. Preliminary held at Vancouver on June 30, before Captain Eddie. <i>Finding.</i> —Accident due to excessive speed under circumstances. Master cautioned.
"Turret Chief," SS.....	Newcastle, G.B., 106,605	On November 8, stranded 6 miles east of Copper harbour, lake Superior, U.S.A. Formal investigation held at Kingston, Ont., before Commander Lindsay, on November 21. <i>Finding.</i> —Heavy gale cause of accident. Master severely censured for lack of seamanship displayed.



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STATEMENT of Investigations held in Canada into Wrecks and Casualties which occurred to Canadian, British and Foreign Vessels in Canadian Waters during the fiscal year 1913-14.—*Concluded.*

Name of Ship.	Registered Port and No.	Remarks.
"Valleyfield," SS. "St. Laurent" collision.	Montreal, Que., 69,595..	<i>See under St. Laurent.</i>
"Vadso," SS.....	Victoria, B.C., 124,077..	On February 3, on British Columbia coast. Formal investigation held at Vancouver, on February 20, before Captain Macpherson. <i>Finding.</i> —No one to blame. Loss of vessel due to her striking an uncharted danger in Portland inlet.
"Westport III," SS .....	Yarmouth, N.S., 116,208.	On April 13, took fire in bay of Fundy. Formal investigation held at Yarmouth on April 23, before Captain Murphy. <i>Finding.</i> —Fire caused by spontaneous combustion in mattresses in the cargo or by rats. No one to blame.
"Wabana," SS.....	Liverpool, G.B., 131,402.	On June 9, touched bottom near Fame point, Que. Formal investigation held at Quebec on June 18, before Commander Lindsay. <i>Finding.</i> —Accident due to disregard of master's orders and lack of judgment on the part of first officer, in allowing vessel to approach too close to land, and his (first officer's) certificate is suspended for six months.
"Whakatane," SS.....	Plymouth, G.B., 111,348.	On September 13, collided with Gilmour's wharf, Indian cove, St. Lawrence river. Formal investigation held at Quebec on September 19, and at Montreal on September 24 and 25, before Commander Lindsay. <i>Finding.</i> —Both master and pilot to blame. Master severely reprimanded for lack of initiative pertaining to safe navigation of his vessel. Pilot's license suspended for balance of season.
"Wabana," SS., Schr., "Annie Roberts" collision.	Liverpool, G.B., 131,402. (Newfoundland).	On October 22, collided in Sydney harbour. Formal investigation held at Montreal on November 13 and 24 before Commander Lindsay. <i>Finding.</i> — <i>Annie Roberts</i> alone to blame. Persons in charge of her showed total ignorance of rules of the road.



SEA-GOING VESSELS.

Date of Casualty.	Name of Ship and Off. No.	Age of Ship, years.	Registered Port.	How rigged. Iron or wood. Steam or Sail.	Register Tonnage.	Port sailed from Port bound to.	Place where casualty happened.	Particulars of casualty. Name of master.	Lives Lost.	Loss. Total or partial.
Jan. 10	Alice P. Turner... 201,918	46	Stonington, Conn.	Sch..... Wood Sail	166	Maitland, N.S..... Boston, Mass.	Spencers Island, N.S.	Stranded..... A. Ogilvie	.....	Part, \$200.
Jan. 13	Abissinia.....	12	Hamburg, Ger....	4 mts. .... Steel Steam	3,691	Hamburg..... Philadelphia.	Lat. 45° 14' N..... Lon. 42° 34' W. No. Atlantic.	Rudder Stock..... Broken L. Moass.	.....	Part, \$43,400.
Jan. 28	Alice P. Turner... 201,918	46	Stonington, Conn.	Sch..... Wood Sail	166	Parrsboro, N.S..... Boston, Mass.	Black Rock, Bay of Fundy.	Stranded..... H. C. Rector.	.....	Total, ship, \$1,000; Cargo, \$1,000.
Jan. 29	Albert D. Mills... 112,000	9	Parrsboro, N.S. . .	Sch..... Wood Sail	326	New York..... San Domingo.	Lat. 35° 17' N..... Lon. 73° 41' W. Atlantic Ocean.	Damaged by heavy seas. F. Backhoise.	.....	Part, \$175.
Mar. 15	Arkona.....	12	Foreign .....	Sch..... Wood Sail	97	Gloucester, U.S.A.. Liverpool, N.S.	Between Cape Sable and Little Hope, N.S.	Loss of sails..... N. Wharton.	.....	Part, \$150.
May 25	Athlon..... 103,495	18	Lunenburg, N.S. .	Sch..... Wood Sail	99·05	Fortune, Nfld..... Sydney, N.S.	Black Head, Nfld...	Stranded..... Jas. Burton.	.....	Total, \$2,500.
July 20	Atlantic... .. 122,143	7	Lunenburg, N.S. .	Sch.....	67	..... Clark's Harbour	Barrington hr., N.S.	Stranded.....	.....	Part.
Aug. 2	Archie Crawell....	10	Lunenburg, N.S. .	Sch..... Wood Sail	....	Sherbrook, N.S.....	Pollock Rip, U.S.A. No. Atlantic.	Collided with "Enos Goule."	.....	Part.
Aug. 28	Arthur J. Parker..	4	St. John, N.B.....	Sch... .. Wood Sail	119	Weymouth, N.S..... Boston, Mass.	Boston harbour..	Stranded..... W. H. Smith.	.....	No loss.
Sept. 9	Agnes G. Donahue	10	Lunenburg, N.S. .	Sch..... Wood Sail	99	Annapolis, N.S.... St. John, N.B.	Point Prim, N.S....	Wrecked..... Wm. Kaiser.	.....	Total.
Oct. 6	Ada Mildred..... 107,961	13	Paspebiac, P.Q. .	Sch. .... Wood Sail	93	Grand River, P.Q... Halifax, N.S.	Indian Rocks, P.E.I.	Stranded..... J. F. Tanner.	.....	Part, \$400.



STATEMENT OF WRECKS AND CASUALTIES reported as having occurred to British, Canadian, and Foreign Vessels in Canadian Waters, and to Canadian Vessels in other Waters from January 1 to December 31, 1913—Continued.

Date of Casualty.	Name of Ship and Off. No.	Age of Ship.	Registered Port.	How rigged. Iron or wood. Steam or Sail.	Register Tonnage.	Port sailed from Port bound to.	Place where casualty happened.	Particulars of casualty. Name of master.	Lives lost.	Loss. Total or partial.
Oct. 16	Annie M. Parker. 111,517	21	Bridgetown, B'dos.	Sch. Wood Sail	597	Canabeese, Fla. St. John, N.B.	Lat. 38° 56' Lon. 72° 15' No. Atlantic. Cumberland bay, N.B.	Engine house and sails carried away. A. E. Rafuse.	.....	Part, ship, \$1,200 ; cargo, \$600.
Nov. 1	Athol. 100,107	22	Parrsboro, N.S.	Sch. Wood Sail	70	St. John, N.B. Alma, N.B.	.....	Stranded. W. F. Copp.	.....	Total, ship, \$500 ; cargo, \$1,300.
Nov. 2	Albert A. Young. 130,740	2	Lunenburg, N.S.	Sch. Wood Sail	92	Mahone Bay, N.S. Cardigan, Bay, P.E.I.	Port Hasting, N.S.	Collided with "St. Leonard." W. Sarty.	.....	Part, \$3,500.
Jan. 16	B. B. Hardwich. 100,018	16	Annapolis, N.S.	Sch. Wood Steam	123	Boston, Mass. Weymouth, N.S.	Coast of Maine, U.S.A.	Stranded. Oliver Comeau.	.....	Part.
Feb. 8	Boston. 98,585	13	Yarmouth, N.S.	Sch. Steel	734	Yarmouth, N.S. Boston, Mass.	Atlantic ocean.	Damaged by heavy seas.	.....	Part.
Feb. 25	Bartholdi. 100,004	22	Annapolis, N.S.	Sch. Wood Sail	299	Mobile, Ala. San Pedro de Macoris.	35 miles N.W. of Lat. 25° 5' N. Lon. 83° 17' W. Gulf of Mexico	Damaged by heavy seas. A. Simson.	.....	Part.
Mar. 7	Bessie Dollar. 121,272	6	Victoria, B.C.	4 mts. Steel	2,747	Manila. San Pedro, Cal.	Lat. 41° 34' N. Lon. 139° 54' E. Japan Sea.	Damaged by heavy seas. John Graham.	.....	Part.
Mar. 22	Basile. 111,900	7	Weymouth, N.S.	Sch. Wood Sail	158	Condives. Turks Island.	Squidrocket, U.S.A.	Stranded.	.....	Part.
Mar. 22	Bartholdi. 100,004	22	Annapolis, N.S.	Sch. Wood Sail	299	Mobile, Ala. San Pedro de Macoris.	Lat. 28° N. Lon. 76° W. No. Atlantic.	Water logged and abandoned. H. W. Hammett.	.....	Total.
May 30	Beatrice L. Corkum. 107,130	14	Halifax, N.S.	Sch. Wood Sail	.....	Halifax, N.S. Vineyard Haven.	Clark harbour, N.S.	Stranded. E. Anderson.	.....	Part, \$2,000.
July 4	Bendu. 123,995	7	Liverpool, G.B.	Steel	2,821	Campbellton, N.B. Pointe LaGarde.	Oak Point, Restigouche river.	Collided with 'Canso' R. H. Jones.	.....	Part.



July 21	Boetic..... 127,687	4	St. John's Nfld...	Sch..... Steel	464	Sydney..... Churchill.	Point Riche Light, Nfld.	Stranded..... E. Falk.	Part.
Aug. 24	Barcelona.....	17	Hamburg, Ger....	Str..... Steam	3,357	Hamburg... Montreal.	Below Long Point, St. Lawrence River	Stranded..... M. Von Sohren.	Part.
Oct. 5	Bjorvin.....	22	Norwegian..	Schr..... Steam	1,785	Pugwash, N.S..... Dublin, C.B.	Wood island, North- umberland str.	Stranded..... S. O. Sorensen.	Part, ship, \$200,000 ; cargo, \$4,500.
Nov. 1	Bridgeport..... 135,126	1	London, G. B.....	Schr..... Steel	3,380	Sydney..... Montreal.	Lost outside of Syd- ney, N.S. presum- ably. J. Olsen.	..... 45	Total, \$72,400.
Dec 8	Bravo..... 103,497	18	Lunenburg, N. S..	Schr..... Wood	147	North Sydney, N.S. Shelburne, N.S.	Louisburg, N.S.....	Stranded..... H. N. Smith.	Part.
Dec. 9	Bessie. .... 100,545	17	Digby, N.S.....	Schr..... Wood	88	Boston, Mass..... Plympton, N.S.	Boston harbour..	Stranded..... Thos. Adams.	Part, £5,000.
Dec. 9	Benefit..... 107,566	17	Parrsboro, N.S....	Schr..... Sail	229	Kingsport, N.S..... Havana, Cuba.	Lat. 38° 16' N..... Lon. 67° 52' W. N. Atlantic.	Foundered..... J. T. Salter.	Total, ship, \$6,000 ; cargo, \$5,000.
Jan. 7	Cheslakee.. .. 130,305	24	Vancouver, B.C...	Schr.. .. Steel	261 42	Vancouver..... Powell river.	Van Anda harbour, B.C.	Foundered..... C. Cockle.	7 Total.
Jan. 16	Cacouna..... 87,993	29	Montreal.....	Schr..... Steam	52	North Sydney, N.S. Halifax, N.S.	Halifax harbour.....	Collided with "Scots- man."	Part, \$30.
April 13	Cascades... .. 112,243	11	Victoria, B.C.....	Sloop..... Wood	81	Vancouver, B.C..... Victoria, B.C.	Strait of Georgia, B.C.	Collided..... C. F. Hardt. S. Noel.	Part.
May 30	Canada.....	15	Trieste, Austria...	Schr..... Steel	8,816	Montreal..... Trieste.	Above St. Augustine St. Lawrence river.	Grounded..... Capt. Cosuleck.	Part.
May 30	C. A. Goreham. . 90,434	23	Barrington pass- age, N.S.	Schr..... Steam	33 39	Wood Harbour, N.S. Fishing.	Seal island, N.S.....	Stranded..... F. Goreham.	Part.
June 10	Cruizer..... 104,606	18	Liverpool ..	Schr... .. Sail	24	Quebec... .. Escoumains, P.Q..	Mouth of Saguenay river.	Stranded..... Robt. Pugh.	Part.
July 9	Cacouna .. .. 87,993	28	Montreal...	..... Iron	931	Louisburg, N.S..... Chatham, N.B.	Off Capé Traverse, P.E.I.	Collided with "Sarah A. Townsend."	Part.
July 13	Christella... .. 131,026	1	Vancouver, B.C..	Schr..... Steam	78 64	Vancouver.....	Vancouver harbour.	Burnt..... J. L. Newman. D. B. Scouler.	Total, \$15,000.
July 28	Crown of Cordova. 112,809	12	Glasgow.....	Schr..... Gas	2,239	London... .. Quebec.	Cap de la Madeleine, St. Lawrence river.	Collided with 'Lady of Gaspé.'	Part, heavy damage.
Aug. 8	Chebucto... .. 168,683	17	Halifax, N.S.....	..... Steel	184 45	Halifax..... Halifax.	Halifax harbour ..	Stranded..... M. Campbell. John Hare.	Part, \$800



STATEMENT OF WRECKS AND CASUALTIES reported as having occurred to British, Canadian and Foreign Vessels in Canadian Waters and to Canadian Vessels in other Waters, from January 1 to December 31, 1913—*Continued.*

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Aug. 23	Canada..... 114,146	21	Quebec.....	Iron Steam	448	.....	New Carlisle, N.B.	Stranded.....	.....	Part.
Sept. 13	Cearense..... 99,302	22	Liverpool.....	Schr..... Steel	1,790	Philadelphia..... Port Nelson.	Estuary, Nelson river	Stranded..... A. W. Howard.	.....	Total, \$130,000.
Nov. 4	Carrie, C..... 125,989	22	Gloucester, U.S.A.	Schr..... Wood Sail	75	Gloucester..... Fishing.	La Have banks, N.S.	Sprung a leak..... S. McPhee.	.....	Part, \$300.
Nov. 20	Coronado..... 77,461	39	.....	Barge..... Iron Sail	970	Vancouver, B.C..... Vancouver, B.C.....	Gulf of Georgia.....	Foundered..... W. Sanderson.	.....	Total, \$22,000.
Dec. 24	Cheslie..... 103,726	17	Parrsboro, N.S....	Schr..... Wood Sail	295	Kingsport, N.S..... Havana, Cuba.	Lat. 38° 18' N ..... Lon. 67° 52' W. N. Atlantic.	Foundered..... J. T. Salter.	.....	Total, ship, \$2,000 ; cargo, \$2,000.
Oct. 25	Despatch..... 157,556	14	.....	Schr.....	539	Seattle, Wash..... Victoria, B.C.	Victoria inner harbour.	Collided with tug "Point Hope." H. B. McKay.	.....	Part, \$310.
Nov. 12	Diana..... 157,687	10	Gloucester, U.S.A.	Schr..... Wood Sail	89	Gloucester..... Fishing.	Shag harbour, N.S.	Struck sunken rock.. L. Parsons.	.....	Total, \$10,000.
Jan. 9	Evelyn..... 118,893	6	West Hartlepool, G.B.	F. & A..... Steel Steam	2,379	Nordenham, Ger..... Savannah, Georgia	Louisburg, N.S. ....	Foundered..... G. Higginbotham.	.....	Total.
Jan. 19	Elsie Porter..... 130,819	1	Lunenburg, N.S..	Schr..... Wood Sail	99	Demerara, W.L..... Demerara, W.I.	Lat. 13° N ..... Lon. 61° W..... Atlantic ocean.	Sprung a leak..... I. Eisenhauer.	..	Part.
Feb. 9	Evolution..... 94,855	24	Bridgetown, Bdos.	Schr..... Wood Sail	173	Liverpool, N.S..... Portsmouth, N.S.	45 miles S.E. of Seal island, N.S. ....	Loss of rigging and leaking. J. E. Rafuse.	.....	Part, \$400.
Feb. 9	Evangelin..... 130,598	1	Halifax, N.S.....	Schr..... Steel Steam	2,442	Halifax, N.S..... Keywest.	Christobel.....	Collided..... W. Ellis.	.....	Part, \$2,500.
Feb. 19	Earl Grey..... 116,904	7	Parrsboro, N.S....	Schr..... Wood Sail	379	..... Georgetown.	Atlantic ocean.....	Sprung a leak..... A. H. Zinch.	.....	Part, \$2,000.



May 15	Earl Grey..... 116,904	1	Parrsboro, N.S....	Schr..... Wood	379	Mobile, Ala.... Demerara, W.I.	Lat. 23° 29' N..... Lon. 81° 59' W.	Damaged by heavy sea.	Part.
April 18	Evolution..... 94,855	25	Bridgetown, Bdos.	Sail Sch..... Wood	173	Portsmouth, N.H.... Liverpool, N.S.	N. Atlantic. Portsmouth hr.....	A. H. Zinck. Stranded..... J. E. Rafuse.	Total, \$2,000.
May 14	Eva..... 96,991	22	Vancouver, B.C....	F. & A..... Wood Steam	24	Vancouver..... Eburne.	Fraser river.....	Stranded..... Alex. McRae.	
Aug. 24	Etoile..... 77,874	33	Quebec.....	Iron & wood Steam	316	Quebec..... Cape St. Ignace.	Cape St. Ignace, St. Lawrence river.	Stranded..... F. Boisvert.	Part, \$100.
Aug. 27	Eskasoni..... 112,672	17	St. John, N.B....	Sch.... Steel	1,682	Baltimore..... New Orleans.	New Orleans.....	Main mast bent when loading.	Part.
Sept. 8	E. B. No. 1..... 126,437	...	Toronto, Ont. ....	Dredge..... Wood Sail	139	Murray Harbour, P.E.I. Rustico, P.E.I.	Six miles from Rustico.	E. W. Hickey. Stranded..... H. McMillan.	Total, \$25,000.
Oct. 19	E. Mayfield..... 103,739	15	Parrsboro, N.S....	Sch..... Wood Sail	75	Annapolis, N.S..... St. John, N.B.	Annapolis river.....	Foundered..... B. Merriam.	Part, ship, \$500; cargo, \$500.
Oct. 21	Emma..... 111,493.	13	Quebec.....	Sch..... Sail	66	.....	Crane island, St. Lawrence river.	Collided with Sch..... "Lizzie Lindsay," and sank.	Total.
Oct. 31	Estelle..... 80,748	35	Quebec.....	Sch..... Wood Sail	80	Tadousac, P.Q..... Quebec.	Pilgrims island, St. Lawrence river.	Foundered..... X. Gagne.	Total, ship, \$800; cargo, \$1,000.
Jan. 5	Florence E. Getson 130,830	1	Lunenburg, N.S..	Sch..... Wood Sail	99-45	Phillipsburg..... Lunenburg, N.S.	Near Dog island, Caribbean sea.	Foundered..... H. Richard.	Total, ship, \$10,000; cargo, \$300.
Jan. 25	Florence May..... 122,249	12	Digby, N.S. ....	Sch..... Wood Sail	13-63	Tiverton, N.S..... Digby, N.S.	Digby Gut, N.S.....	Stranded..... J. Hamilton.	Part.
April 28	Frances A. Rice.. 94,821	24	Weymouth, N.S..	Sch..... Wood Sail	122	Meteghan, N.S..... Boston, Mass.	Sanders Ledge, Nahant, Mass.	Stranded..... C. F. Cleveland.	
May 31	Frein.....	40	Norwegian.....	Iron Sail	1,593	Barbadoes..... Bahia Blanca.	Cape Fourchu, N.S..	Stranded..... G. Olsen.	Total, \$25,000.
May —	Florence..... 88,309	28	Quebec.....	Tug..... Wood Steam	2,985	Escoumains, P.Q.... New York.	Richelieu river, St. Lawrence river.	Stranded..... I. E. Perron.	Slight damage.
June 26	Felix.....	7	Norwegian. . . .	Sch..... Steel Steam	1,123	Quebec-Sydney. ....	East of West pt., Orleans island, St. Lawrence river.	Stranded..... A. Koenig.	Slight damage.
Oct. 15	Falmouth.....	16	Barrington, N.S..	Sch.... Wood Sail	100	New York..... Halifax, N.S.	Lat. 40° 80' N..... Lon. 68° 10' W. Atlantic ocean.	Loss of deck load and sails torn. E. H. Kirby.	Part, ship, \$100; cargo, \$1,300.



STATEMENT OF WRECKS AND CASUALTIES reported as having occurred to British, Canadian and Foreign Vessels in Canadian Waters and to Canadian Vessels in other Waters, from January 1 to December 31, 1913 —Continued.

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Nov. 1	Flora T. 90,737	4	Charlottetown, P.E.I.	Sch. Wood Sail	52	Pugwash, N.S. Charlottetown, P.E.I.	Canoe cove, P.E.I.	Foundered. B. Trenholm.	2	Total.
May 2	Glace Bay	1					Near Cape Race.	Stranded.		Total.
May 3	Geneva May. 111,876	11	Yarmouth, N.S.	Sch. Wood Sail	72	Wood Harbour, N.S. Fishing.	Seal island, N.S.	Stranded.		Part.
May 17	George Pearl. 116,723	9	St. John, N.B.	Sch. Wood Sail	118	Liscomb, N.S. New York.	Ten miles S.E. of Halifax.	Part of deck load carried away. John Nauffes.		Part.
May 19	Gerald Turnbull. 132,876	66	Cardiff, G.B.	Sch. Steel Steam	1,967	Cardiff. Grindstone isld., P.Q.	Gannet Dry Ledge, N. Atlantic.	Stranded. A. Willison.		Total.
June 7	Gog. 107,840	12	Victoria, B.C.	Tow barge. Wood	132.14	Vancouver, B.C. Rainy river.	Howe sound, B.C.	Stranded.		Total.
June 27	Golden Rod. 100,271	20	Windsor, N.S.	Bkte. Wood Sail	533	Pascagoula, U.S.A. St. Thomas, W.I.	Lat. 26° 29' N Lon. 86° 42' W. Gulf of Mexico.	Part of deck load carried away.		Part.
Oct. 2	Gypsum Empress. 100,731	21	Windsor, N.S.	Sch. Wood Sail	723	Pensacola, Fla. Las Palmas.	Lat. 33° 44' N. Lon. 74° 29' W. N. Atlantic.	Hull leaking. A. Knowlton.		No loss.
Oct. 4	Gestina	4	Cornavon, G.B.	Sch. Wood Sail	98	Port Madoc, G.B. No. Sydney, N.S.	Lat. 45° 30' N. Lon. 60° 30' W. N. Atlantic.	Stranded. R. Pritchard.		Total.
Oct. 14	George Pearl. 116,723	9	St. John, N.B.	Sch. Wood Sail	118		Off Sanhaty head, Mass.	Loss of sails and leaking.		Part.
Oct. 14	Glenara. 100,114	23	Parrsboro, N.S.	Sch. Wood Sail	72	St. John, N.B. Rockland, Me.	Dipper harbour, Bay of Fundy, N.B.	Stranded. Capt. Sabeau.		Total, \$200.



SESSIONAL PAPER No. 21

Oct. 15	Grace Darling 111,574	12	Parrsboro, N.S.	Sch. .... Wood Sail	97	Noel, N.S. .... Hartford, Conn.	Spencers island, Bay of Fundy.	Stranded. .... F. Ogilvie.	Part, ship, \$500; cargo, \$260.
Dec. 25	Glenafon 100,003	25	Annapolis, N.S.	Sch. .... Wood Sail	344	Mobile..... Havana.	Lon. 85° 27' E .... Lat. 28° 28' N. Gulf of Mexico.	Foundered..... L. L. Eden.	Total, \$760.
Oct. 16	Golden Rod 100,271	20	Windsor, N.S.	Bkte..... Wood Sail	533	Sabine Pass..... San Fernando, Tri.	Lat. 23° 31' W .... Lon. 82° 19' W. Str. of Florida.	Part of rigging dam- aged. F. A. Jarvis.	Part., \$1,500
Oct. 22	George Pearl 116,723	9	St. John, N.B.	Schr..... Wood Sail	118 36	Liscomb, N.S..... New York.	75 miles off High- land Light, Mass.	Part of cargo carried away. John Nauffes.	Part., \$25
Nov. 3	Gypsum Emperor 100,279	31	Windsor, N.S.	Schr..... Wood Sail	695	New York .... Halifax.	60 miles S. E. of Nantucket Lt. Atlantic ocean.	Foundered..... Thos. Martin.	Total, Ship, \$500. Cargo, \$500
Nov. 19	Grace Darling 122,103	7	Lunenburg, N.S.	Schr..... Wood Sail	64	Charlottetown, P.E.I. Halifax.	Charlottetown Har- bour.	Collided with bridge. A. A. Lautz.	Part., \$200
Nov. 21	Georgian II. 117,113	8	Vancouver, B.C.	Tow..... Barge Wood	649 06	Vancouver, B.C.... Prince Rupert, B.C.	Queen Charlotte.... Sound.	Stranded..... Wm. Bradley.	Total, \$15,000
Dec. 11	Grace Darling 111,574.	12	Parrsboro, N.S.	Schr..... Wood Sail	97	.....	Chatham, Mass.....	Main mast bent..... Capt. King.	Part.
Dec. 24	G. R. Hughes 133,716	3	Vancouver, B.C.	Schr..... Wood Gas	29	Vancouver, B.C..... Fishing.	Hope island, B.C....	Wrecked ..... P. Peterson.	Total, Ship, \$14,000. Cargo, \$250
Jan. 6	Halifax 129,590	1	Halifax, N.S.	..... Steel Steam	268	Halifax..... Dartmouth, N.S.	Half way between Halifax and Dart- mouth.	Collided ..... C. O. Ozen.	Part., \$800
Feb. 2	Hilda R. 126,904	2	Halifax, N.S.	Schr..... Wood Sail	99	Harbour Grace, Nfld. Gibraltar.	Lat. 40° N. .... Lon. 42° W. No. Atlantic.	Sails split and part of rigging carried away. W. J. Rose	Part., \$750
Feb. 2	Harry 100,119	20	Parrsboro, N.S.	Schr..... Wood Sail	396	St. John, N.B. .... New York.	Atlantic ocean .....	Part of cargo jetti- soned in heavy sea. A. Goreham.	Part.
Mar. 28	Herakles .....	1	Norwegian..	Schr..... Steel Steam	2,724	Barry Docks..... Sydney, N.S.	Louisburg harbour, N.S.	Bow grazed..... E. A. Buge.	Part., \$1,000
April 12	Hugh John 111,416	13	Halifax, N.S.	Schr..... Wood Sail	119 44	Bridgetown, Bdos... Halifax, N.S.....	Lat. 30° 35' N..... Lon. 63° 13' W. No. Atlantic.	Damaged in gale..... B. Scott.	Part.
May 30	Harry 100,119	20	Parrsboro, N.S.	Schr..... Wood Sail	396	Port Greville, N.S.. New York.	Off Pollock Rip Lightship, U.S.A.	Collided with Amer- ican vessel. Wm. Morrison.	Part., \$500
July 7	Hesperian 124,266	5	Glasgow	Schr..... Steel Steam	6,316	Glasgow..... Montreal.	Lat. 55° 0' N..... Lon. 22° 30' W.... No. Atlantic.	Crank shaft broken. W. S. Morin.	Part.



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July 14	Herakles .....	1	Norwegian .....	Schr. .... Steel Steam	2,724	Sydney, N.S. .... New Westminster.	Sand Head, Fraser river.	Stranded.... E. A. Bug.	.....	Slight damage
July 21	Halifax .....	33	Halifax, N.S. ....	F. & A. .... Steel Steam	1,078	Boston, Mass. .... Charlottetown, P.E.I.	Halifax harbour....	Stranded..... F. H. Hawes.	.....	No loss
Aug. 3	Hugh John .....	13	Halifax, N.S. ....	Schr. .... Wood Sail	119	Sherbrook, N.S. .... Boston, Mass.	Boston harbour .....	Collided with "Ellen and Mary". B. Scott.	.....	Part., \$3,200
July 12	Hazel Trahey .....	3	Parrsboro, N.S. ....	Schr. .... Wood Sail	145	Parrsboro, N.S. .... Barbadoes.	60 miles off Sambro, N.S.	Collided with "Indrandi". H. C. Richard.	.....	Part., \$5,000
Aug. 14	Hesperian .....	5	Glasgow .....	Schr. .... Steel Steam	6,317	Glasgow .....	Varennes and Cape St. Michel, St. Lawrence river.	Stranded..... W. S. Main.	.....	Slight damage
Aug. 28	Hugh John .....	13	Halifax, N.S. ....	Schr. .... Wood Sail	119	Sherbrook, N.S. .... Boston, Mass.	Vineyard Haven, U.S.A.	Collided with "Bruce Hawkins". B. Scott.	.....	Part., \$300
Oct. 16	Harteney W .....	10	Parrsboro, N.S. ....	Schr. .... Wood Sail	271	..... Wolfville, N.S.	South Boston, Mass.	Stranded..... W. E. Watson.	.....	Part.
Oct. 30	Himera .....	12	St. John, N.S. ....	Schr. .... Steel	2,351	Swendborg..... Ystad, Sweden.	6 miles E. of Ystad.	Stranded .. G. B. Leonard.	.....	Part.
Nov. 16	Hilda R .....	3	Halifax, N.S. ....	Schr. .... Wood Sail	100	Grand Banks, Nfld. .. Harbour Grace, Nfld.	Lat. 38° 25' W Lon. 42½ N°.	Part of rigging and life boat carried away. W. Getman	.....	Part., \$250
Jan. 13	Invictus .....	8	Annapolis, N.S. ....	Schr. .... Wood Sail	327	New York..... Havana, Cuba.	Lat. 33° 15' N. Lon. 72° 10' W. No. atlantic.	Damaged by heavy seas. J. H. Hill.	.....	Part., \$75
July 12	Indrandi .....	25	Glasgow .....	Schr. .... Steel Steam	2,339	Glasgow .. Pugwash, N.S. ....	Lat. 43° 28' N..... Lon. 63° 50' W. No. atlantic.	Collided with "Hazel Trahey". J. H. Telfer.	.....	Part., \$200
Aug. 9	Irene .....	34	Halifax, N.S. ....	Schr. .... Sail	64	St. Omer, P.Q. .... No. Sydney, N.S.	Off Mount Carmel, P.E.I.	Stranded..... Geo. T. Moulsten.	.....	Total.



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Nov. 3	Ida M. Zinek.....	...	.....	.....	Lunenburg, N.S. .... No. Sydney, N.S.	Entrance to Sydney, harbour.	Stranded.....	...	Part., \$180
Dec. 7	Iona W ..... 112,080	11	Lunenburg, N.S. ....	Schr..... Wood Sail	77·98	Georgetown, P.E.I. .... Liverpool, N.S.	Last seen off White Head, N.S.	John Freeman .....	6 Total, \$5,000.
Jan. 26	Jean ..... 116,916	7	Liverpool, N.S. ....	Schr..... Wood Sail	190	St. Johns, Nfld..... Pernambuca.	Lat. 39° 20' N., Long. 42° 0' W.	Loss of sails and rig- ging. E. Barker.	Part.
Jan. 31	Jewell... .. 74,019	37	Lunenburg, N.S. ....	Schr..... Wood Sail	52	Lunenburg, N.S. .... Halifax, N.S.	Halifax harbour.....	Collided with "Dart- mouth." L. Young.	Part., \$1,000.
Feb. 18	Justice H..... 130,593	1	Halifax, N.S. ....	.....	.....	Halifax, N.S. .... Fouchu, N.S.	Framboise bay, N.S.	Stranded.....	Total.
June 8	J. O. Gravel..... 126,490	4	Montreal, P.Q. ....	Tug..... Wood Steam	3·79	Montreal..... Les Escoumains, P.Q.	Lower Traverse, St. Lawrence river.	Stranded..... G. Mongeau.	Part.
July 16	Jennie C..... 80,061	33	St. John, N.B. ....	Schr..... Wood Sail	98	Windsor, N.S. .... Boston, Mass.	Hard island bar, Port Clyde, Me.	Stranded..... Geo. E. Dickson.	Total, \$10,000. Cargo, \$1,600.
Oct. 2	Janie F ..... 107,768	11	Charlottetown, P.E.I.	Schr..... Wood Sail	46·35	Port Hastings, N.S. .... Souris, P.E.I.	Entrance to Pictou harbour, N.S.	Stranded..... J. F. Proctor.	Part.
Oct. 14	James William ... 103,807	5	Pictou, N.S. ....	Schr..... Iron Sail	90	Digby, N.S. .... Annapolis, N.S.	Lat. 46° 42' N., Long. 64° 42' W. North atlantic.	Stranded..... G. L. Getson.	Part.
Oct. 20	Josephine..... 116,951	—	Quebec.....	Schr..... Wood Sail	355	Rimouski, P.Q. .... Quebec.	4 miles s. of Rivière au Canard, P.Q.	Wrecked ..... X. Loque.	Total, \$3,000.
Nov. 19	J. G. Cox ..... 116,853	8	Shelburne, N.S. ....	Schr..... Wood Sail	65·41	Halifax..... Bras d'Or Bay, N.B.	Bulff harbour, Can. Labrador.	Stranded..... R. L. McCarthy.	Part. Ship, \$300. Cargo, \$200.
Dec. 5	Juanita..... 111,726	12	Lunenburg, N.S. ....	Schr..... Wood Sail	99·93	Cadiz, Spain..... Lunenburg, N.S.	Lat. 32° N., Long. 58° 10' W., North Atlantic.	Foundered ..... P. Korkum.	Part. Ship, \$350. Cargo, \$6,000.
Oct. 6	King Josidee ..... 125,965	5	Parrsboro, N.S. ....	Schr..... Wood Sail	147	Parrsboro, N.S. .... Boston, Mass.	Boston harbour.....	Stranded..... A. S. Faulkner.	No loss.
Feb. 2	Ludlow..... 121,831	8	St. John, N.B. ....	..... Steel Steam	363	In East Ferry dock..	East Side Ferry dock	Collided with "Knutsford." W. H. Mabee.	Part. \$1,500.
April 4	Lord Dirby..... 120,897	8	Liverpool, G.B. ....	Schr..... Steel Steam	2,401	Seattle, Wash..... Vancouver, B.C.	Strawberry island, Rosario Str.	Stranded..... W. H. Fillons.	
April 25	Lewis..... 117,021	9	Sydney, N.S. ....	Schr..... Wood Sail	99	Liverpool, N.S. .... Boston, Mass.	Off Little Hope, No. atlantic.	Rudder braces broken. L. J. Cook.	Part. \$400.
July 13	Lucila..... 117,186	74	Chatham, N.B. ....	Schr..... Wood Sail	99	Five Islands, N.S. .... New York.	Five miles east of Eatons, Mich.	Part of rigging car- ried away. I. Scott.	Part. \$500.



STATEMENT of Wrecks and Casualties reported as having occurred to British, Canadian and Foreign Vessels in Canadian Waters, and to Canadian Vessels in other Waters, from January 1 to December 31, 1913.—Continued.

Date of Casualty.	Name of Ship and Off. No.	Age of Ship, years.	Registered Port.	How rigged Iron or Wood Steam or Sail.	Register Tonnage.	Port sailed from Port bound to	Place where casualty happened.	Particulars of casualty. Name of master.	Lives Lost.	Loss. Total or partial.
July —	Lady Sybil . . . . . 85,406	5	Magdalen Islands.	Schr. . . . . Steel	352	Pictou, N.S. . . . . Etang du Nord, Mag. islands.	S. W. Cape Magdalen islands.	Stranded. . . . . F. Ferguson.	.....	No loss.
July 28	Lady of Gaspe . . . . . 78,554	36	Quebec. . . . .	Schr. . . . . Iron Steam	705 21	Montreal. . . . . Quebec.	Half a mile above Cap de la Madeleine, St. Lawrence river.	Collided with "Crown of Cordova."	.....	Heavy loss.
July 29	Lake Manitoba. . . . . 113,497	12	Liverpool, G.B. . . .	Schr. . . . . Steel Steam	6,276	Liverpool . . . . . Montreal.	Island of Orleans, St. Lawrence river.	Stranded. . . . . G. V. Evans.	.....	Part. heavy loss.
Sept. 17	Leonard Parker . . . . . 107,065	16	Bridgetown, Bdos.	Schr. . . . . Wood Sail	246	Gulf Port, Miss. . . . . Louisburg, N.S.	Cramp Keys, Fla . . .	Stranded. . . . . C. J. McNeil.	.....	Total, \$7,000.
Oct. 15	Levuka. . . . . 100,519	20	Parrsboro, N.S. . . .	Schr. . . . . Wood Sail	76	Parrsboro, N.S. . . . . Digby, N.S.	Spencers island, Bay of Fundy.	Stranded. . . . . F. Ogilvie.	.....	Part. Ship, \$500. Cargo, \$260.
Oct. 19	Lizzie Lindsay. . . . .	28	Gaspe, P.Q. . . . .	Schr. . . . . Wood Sail	91	Quebec. . . . . Mechins, P.Q.	Quebec harbour. . . . .	Collided with "Emma." M. Chenal.	.....	Part. \$100.
Nov. 4	Laurel. . . . . 116,203	10	Halifax, N.S. . . . .	Schr. . . . . Wood Sail	16	Glace Bay, N.S. . . . . Margaree, N.S.	Margaree harbour . . .	Stranded. . . . . P. Leblanc.	.....	Part. \$75.
Nov. 26	Ladysmith. . . . . 112,324	11	Bridgetown, Bdos.	Schr. . . . . Wood Sail	596	Halifax, N.S. . . . . "	Vineyard Haven, U. S.A.	Collided with "Maud Palmer." R. Lohnes.	.....	Part. \$8,000
Nov. 30	Laura C. . . . . 112,096	11	Bridgetown, Bdos.	Schr. . . . . Wood Sail	249	Bridgewater, N.S. . . . . Cienfuegos, Cuba.	Lahave, N.S. . . . .	Damaged by fire. . . . . S. Creaser.	.....	Part. \$2,000.
Dec. 23	Leconfield. . . . .	2	Provisional register.	Dredge. . . . . Steel Steam	.....	St. John Harbour, N. B.	St. John harbour, N.B.	Foundered. . . . . S. Crawford.	.....	Total, \$124,000.
Jan. 8	Muriel M. Richard 130,470	14	Lunenburg, N.S. . . .	Schr. . . . . Wood Sail	97 06	Phillipsburg . . . . . Lunenburg, N.S.	Three miles west of Dog island, Caribbean sea.	Foundered. . . . . H. Richard.	.....	Total. Ship, \$10,000. Cargo, \$350.



May	8	Marmion 102,622	20	Glasgow	Schr. .... Wood Steam	98	Todd Inlet, B.C. Victoria, B.C.	Entrance to Victoria harbour.	Collided with "Ade- laide," Wm. Ludlow.	....	Trifling.
May	27	Megantic 127,981	4	Liverpool, G.B.	Schr. .... Steel Steam	9183	Montreal Liverpool.	Point Mary St. Lawrence river	Touched lightly. R. F. David.	....	No damage.
June	7	Mikado 111,426	11	Halifax, N.S.	.... Wood Steam	2988	Halifax, N.S. Dartmouth, N.S.	Halifax harbour	Collided with motor boat. J. H. Blakeney.	....	No damage.
June	7	Maia	7	Germany	Schr. .... Steel Steam	1635	Harvey, N.B. Manchester, G.B.	Seal Island, bay of Fundy.	Stranded O. Schacht.	....	Part., \$35,000.
July	3	Marmion 102,622	20	Glasgow	Schr. .... Iron Steam	98	Todd Inlet, B.C. Victoria, B.C.	Victoria harbour	Collided with "Ade- laide," Wm. Ludlow.	....	Trifling.
July	6	Morning Star	....	Boston, Mass.	Schr. .... Wood Sail	85	Boston, Mass. Fishing.	Bauld Bar, Shelburne, N.S.	Stranded Wm. Mackay.	....	Part., \$1,500.
Aug.	9	Miletus 90,823	16	Lunenburg, N.S.	Schr. .... Wood Sail	9591	North Sydney, N.S. Bathurst, N.B.	Cape Bear, Northun- berland steamer, P.E.I.	Stranded A. E. Dean.	....	Total. Ship, \$1,500. Cargo, \$550.
Aug.	16	Margaret G. 112,323	11	Parrsboro, N.S.	Schr. .... Wood Sail	299	.... Santiago, Cuba.	Off Havana, (Gulf of Mexico.	Sprung a leak R. H. Burgess.	....	Part. Ship, \$1,500. Cargo, \$1,000.
Aug.	28	Mildred H. Coch- ran. 183,754	39	St. John, N.B.	Schr. .... Wood Sail	245	St. Martins, N.B. Boston, Mass.	Boston harbour	Stranded Wm. Dewey.	....	No damage.
Sept.	1	Montreal 116,600	9	Montreal	.... Steel Steam	2299.41	Montreal Quebec.	Between Becancourt and Champlain.	Collided with "Quer- ida," F. X. Lafrance.	....	Part., \$150.
Sept.	24	Mount Temple 113,496	12	Liverpool, G.B.	Schr. .... Iron Steam	6601.43	Montreal London.	Montreal harbour	Stranded J. H. Moore.	....	Part.
Sept.	24	Mayflower 126,137	4	Halifax, N.S.	.... Wood Steam	45.03	Halifax Halifax, N.S.	Halifax harbour	Burnt C. Marshall.	....	Total. Ship, \$3,500. Cargo, \$500.
Oct.	3	M. Elvina L. 115,710	9	Quebec	Schr. .... Wood Sail	46	Murray Bay Quebec.	St. Roch Traverse, St. Lawrence river	Collided with "Effie" Geo. Gagnon.	....	Part. Ship, \$300. Cargo, \$50.
Oct.	27	Mildred H. Coch- ran. 133,754	40	St. John, N.B.	Schr. .... Wood Sail	245	St. Martins, N.B. Salem, Mass.	Tynemouth Creek, N.B.	Stranded Wm. Dewey.	....	Part., \$200.
Nov.	10	Muirfield 124,338	6	West Hartlepool, G.B.	Schr. .... Steel Steam	1956.74	Savannah, U.S.A. Havre, France.	Lat. 40° 05' N., Lon. 58° 46' W., North Atlantic.	Fire in cotton cargo E. G. Sturgeon.	....	Part. Cargo, \$30,000.
Nov.	15	Manchester Port 113,130	10	Manchester, G.B.	Schr. .... Steel Steam	2662	Manchester Halifax, N.S.	Off Point Lynus, Eng- land.	Collided with un- known vessel. C. H. Stott.	....	Part.



STATEMENT OF WRECKS AND CASUALTIES reported as having occurred to British, Canadian, and Foreign Vessels in Canadian Waters, and to Canadian Vessels in other Waters, from January 1 to December 31, 1913—*Continued.*

Dates of Casualty.	Name of Ship and Official No.	Age of Ship, years.	Registered Port.	How Rigged. Iron or wood, Steam or sail.	Register Tonnage.	Port sailed from. Port bound to.	Place where Casualty Happened.	Particulars of casualty. Name of Master.	Lives Lost.	Loss. Total or partial.
Dec. 24	Malwa ..... 107,309	12	Quebec.....	Bkte ..... Wood Sail	539	Port of Spain..... Port of Spain.	Lat. 23, Gulf of Mexico.	Foundered..... Jas. Gould.	.....	Total. Ship, \$15,000. Cargo, \$10,000.
Oct. 26	Nule ..... 122,311	6	Lunenburg, N.S..	Schr..... Wood Sail	38·25	Halifax, N.S..... La Have, N.S.	Currie Cove, West Dublin, N.S.	Sprung a leak and part of cargo destroyed by fire. J. D. Wolfe.	.....	Part. Ship, \$100. Cargo, \$1,500.
Jan. 3	Oregon..... 112,106	9	Lunenburg, N.S..	Schr..... Wood Sail	99	New York..... New York.	E.S.E. 55 miles of Cape Hatteras.	Damaged by heavy seas. Wm. Eisenham.	.....	Part., \$7,500.
Jan. 4	Oressa Belle .... 112,120	10	Great Britan.....	Schr..... Wood Sail	95	Burgos, Nfld..... Gloucester, Mass.	125 miles off Cape Sable.	Loss of sails and leaking. W. J. Tuck.	.....	Part., \$500.
Jan. 15	Oscar ..... 103,908	16	Victoria, B.C.....	Slp ..... Wood Steam	61	Victoria, B.C..... Vancouver, B.C.	Nanaimo, B.C.....	Burnt..... A. McDonald.	.....	Total. Ship, \$8,000. Cargo, \$12,000.
May 9	Ophir ..... 122,531	6	Vancouver, B.C..	Schr..... Wood Steam	139	Vancouver, B.C.... Canoe Pass, B.C.	Canoe Pass, B.C....	Burnt..... J. S. Johanson.	6	Total.
Oct. 28	Otis Miller.. .... 103,268	17	Dorchester, N.B..	Schr..... Wood Sail	98	Parrsboro, N.S..... Port Greville, N.S.	Cape Sharp, N.S....	Stranded..... W. B. Mahoney.	.....	Part., \$150.
Nov. 27	Otis Miller..... 103,268	17	Dorchester, N.B..	Schr..... Wood Sail	96	Port Greville, N.S.. Boston, Mass.	Off Quacco, N.B., Bay of Fundy.	Sprung a leak..... J. A. Haws.	.....	Part. Ship, \$300. Cargo, \$4,500.
Jan. —	Pearl Eveline..... 111,414	13	Lunenburg, N.S..	Schr..... Wood Sail	9861	St. John, Nfld..... Oporto, Portugal.	Not known .....	Missing..... F. Pinel.	.....	Total. Ship, \$1,000. Cargo, \$4,750.
April 1	Princess Adelaide. 126,948	3	Victoria, B.C.....	Schr..... Steel Steam	1910	Victoria, B.C..... Seattle, Wash.	N.E. $\frac{1}{2}$ from Pt. Grey Lt. English bay.	Collided..... P. A. Hunter.	.....	Part.
April 13	Princess Sophia... 130,620	1	Victoria, B.C....	Schr..... Steel Steam	1465	Victoria, B.C..... Juneau, Alaska.	Lynx Canal, Alaska.	Stranded..... C. Campbell.	.....	Part., \$20,000.



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April 19	Peerless 111,712	12	Lunenburg, N.S.	Schr. Wood	69	Demerara. Barbadoes.	Carlisle bay, Bdoes.	Collided with "Hilding." L. Hanell.	Part, \$70.
June 11	Percy C. 126,537	4	Liverpool, N.S.	Schr. Wood	99	Liverpool, N.S. New York.	Six miles off Cape Sable.	Sprung a leak. J. Evans.	Part, \$1,200.
" 20	Pisa. .....	17	Hamburg, Ger.	Schr. Sail	3,147-63	Hamburg Quebec.	Quebec.	Collided with dock wall. W. Hauer.	Slight damage.
" 21	Protection	1	Victoria, B.C.	Tug Wood	49-96	Victoria, B.C. Brentwood.	Saanich Inlet, B.C.	Stranded. S. Fraser.	Part.
July 10	Princess Royal 121,988	6	Victoria, B.C.	Steam Wood	981	Victoria. Victoria.	Entrance to 1st Narrows, Burrard inlet	Collided with boom of logs. D. Brown.	No damage.
Aug. 9	Parana 112,113	10	Lunenburg, N.S.	Schr. Wood	9,933	New York Bridgetown, N.S.	Pollock Rip Shoal, U.S.A., N. Atlantic.	Stranded. W. M. Tupper.	Total, ship, \$3,000; cargo, \$1,515.
" 13	Prince George 129,748	31	Newcastle, G.B.	Schr. Sail	92	Seattle, Wash. Prince Rupert, B.C.	Arthur Passage, B.C.	Stranded. Dan. Donald.	Trifling.
" 30	Princess Charlotte 126,236	4	Victoria, B.C.	Steam Steel	1,999	Victoria, B.C. Vancouver, B.C.	Off Marrow Stone Pt., Puget sound	Collided with "Leona." T. O. Griffin.	Slight damage.
Sept. 4	Princess Maquina 133,769	1	Victoria, B.C.	Schr. Steel	979	Victoria, B.C. Alaska.	Disenchantment bay.	Stranded. John McLeod.	Part.
" 25	Plunger 131,152	1	Vancouver, B.C.	Tug Wood	38-42	Vancouver, B.C. New Westminster.	New Westminster.	Collided with gasoline launch. J. R. Grauer.	Part.
" 25	Pisa	17	Hamburg, Ger.	Schr. Steel	3,147-63	Montreal Rotterdam.	Batiscan, St. Lawrence river.	Grounded W. Hauer.	No damage.
Oct. 20	Percy C. 126,037	4	Liverpool, N.S.	Schr. Wood	99	Bridgewater Boston.	70 miles east of Yhatches island.	Lost part of deck cargo. Jos. Evans.	Part, cargo, \$400.
" 25	Point Hope 130,310	31	Victoria, B.C.	Slp. Wood	44-93	Victoria, B.C. Victoria, B.C.	Victoria harbour.	Collided with "Despatch." W. J. McDougall.	No damage.
" 29	Princess Patricia 115,685	11	Victoria, B.C.	2 mts. Steel	535	Nanaimo, B.C. Vancouver, B.C.	Burrard inlet, B.C.	Stranded. J. N. P. Ritchie.	No damage.
Dec. 6	Premier	4	Gloucester, U.S.A.	Schr. Wood	97	Gloucester, U.S.A. Lockport, N.S.	Near Lockport.	Stranded W. T. Morrissey.	Part.
" 9	Point Grey	...	...	Tug Steel	14	Vancouver, B.C.	Burrard inlet, B.C.	Collided with unknown vessel. W. Bert.	Part.
" 12	Princess Royal 121,988	6	Victoria, B.C.	Steam	981	Victoria, B.C. Victoria, B.C.	Burrard inlet, B.C.	Stranded. D. Brown.	No damage.



STATEMENT OF WRECKS AND CASUALTIES reported as having occurred to British, Canadian, and Foreign Vessels in Canadian Waters, and to Canadian Vessels in other Waters, from January 1 to December 31, 1913—Continued.

Dates of Casualty.	Name of Ship and Official No.	Age of Ship, years.	Registered Port.	How Rigged Iron or wood, Steam or sail.	Register Tonnage.	Port sailed from. Port bound to.	Place where Casualty Happened.	Particulars of casualty. Name of Master.	Lives Lost.	Loss. Total or partial.
Dec. 20	Prince George . . . . . 129,748	31	Newcastle . . . . .	Schr. . . . . Steel Steam	75	Seattle, Wash. . . . . Vancouver, B.C.	Burrard inlet, B.C.	Stranded. . . . . D. Donald.	.....	Part.
Mar. 28	Quickstep. . . . .	24	Gloucester, U.S.A.	Schr. . . . . Wood Sail	75	Eastport, U.S.A. . . . . Eastport, U.S.A.	Barton, N.S. . . . .	Loss of Sails . . . . . Geo. F. Spear.	.....	Part, \$1,500.
" 11	Robert Dollar. . . . . 129,587	3	Victoria, B.C. . . . .	F. & A. . . . . Steel Steam	3,419	Portland . . . . . Yokohama.	Columbia river bar, U.S.A.	Stranded . . . . . R. L. Morton.	.....	Part, \$40,000.
April 29	Rakwana. . . . . 130,951	1	Lunenburg, N.S. . . . .	Schr. . . . . Wood Steam	11·31	Lunenburg, N.S. . . . . Lunenburg, N.S.	Lunenburg harbour,	Collided with "Al- pha" A. Meisner.	.....	Part, ship, \$200; cargo, \$50.
May 29	Roma . . . . . 107,125	14	Lunenburg, N.S. . . . .	Schr. . . . . Wood Sail	99	Mahone bay, N.S. . . . . New York.	Nantucket bay, U.S.A.	Loss of anchors and chains.	.....	Part.
June 16	R. L. Borden. . . . . 130,817	2	Lunenburg, N.S. . . . .	Schr. . . . . Wood Sail	99	Lunenburg, N.S. . . . .	Lat. 46° 30' N., Lon. 59° 19' W., North Atlantic.	Main mast sprung. . . . . G. A. Hinmleman.	.....	Part.
July 25	Rolfe. . . . . 112,326	11	Parrsboro, N.S. . . . .	Schr. . . . . Wood Sail	54	Parrsboro, N.S. . . . . Digby, N.S.	Minas basin, N.S. . . . .	Explosion from coal dust or escaped gas. L. A. Rowe.	.....	Part, \$100.
Aug. 1	Romeo. . . . . 100,073	22	St. John, N.B. . . . .	Schr. . . . . Wood Sail	111	Providence, R.I. . . . . St. John, N.B.	Pollock Rip, U.S.A., North Atlantic.	Collided with "Sam- uel Dellaway."	.....	Part.
Oct. 21	Royal Edward. . . . . 125,656	6	Toronto, Ont. . . . .	F. & A. . . . . Steel Steam	5,668	Avonmouth, G.B. . . . . Montreal.	Lat. 51° 30' N., Lon. 3° 2' W., North Atlantic.	Damaged by heavy seas. F. M. Walton.	.....	Part.
Jan. 1	Statesman . . . . . 105,319	18	Liverpool, G.B. . . . .	4 mts. . . . . Steel Steam	4,003	Liverpool . . . . . Victoria, B.C.	Lat. 37° 55' N., Lon. 123° 42' W. Pacific Ocean.	Collided with "John D. Sprinkle." G. Bass.	2	Total.
May 15	Surprise. . . . . 100,448	15	Canso, N.S. . . . .	Schr. . . . . Wood Sail	15	Margaree, N.S. . . . . Pictou, N.S.	Lismore, N.S. . . . .	Stranded. . . . . J. P. Nucom.	.....	Total, \$550.



Month	Day	Name	Age	Sex	Rank	Port of Origin	Destination	Ship	Material	Location	Cause	Result	Value
June	8	Shainrock	107,963			Lunenburg, N.S.	Halifax, N.S.	Bay of Ireland, Nfld.	Schr.	Five miles west of Carnberry island light.	Stranded.	J. Renouf.	Total, ship, \$2,500; cargo, \$2,500.
July	9	Sarah A. Townsend	88,438			Halifax, N.S.	Newcastle, G.B.	Off Cape Traverse, P.E.I., Northumberland straits.	Schr.	Collided with "Cacouna."	Collided with "Cacouna."	J. G. Buffitt.	Heavy damage.
Sept.	9	Simla				Vancouver, B.C.	Port Harford, Cal.	Lat. 40° 12' N., Lon. 124° 18' W. Pacific Ocean.	Schr.	Stranded.	Stranded.	W. H. Moore.	Part, \$7,500.
"	14	Simla				Vancouver, B.C.	Vancouver, B.C.	San Francisco hr.	Schr.	Loss of anchor and cable.	Loss of anchor and cable.		Part.
Oct.	17	Sea Star	75,680			Quebec	Murray Bay, P.Q.	Le s Eboulements wharf, St. Lawrence river.	Schr.	Stranded at low tide.	Stranded at low tide.	A. Gagnon.	Part, \$50.
"	25	Sowell	112,727			London	Savannah, Havre, France.	North Atlantic, 360 miles of Halifax, N.S.	Steel	Fire in cotton cargo.	Fire in cotton cargo.	F. B. Evans.	Part, \$60,000.
Nov.	13	Sam Slick	107,301			Windsor, N.S.	Digby, N.S.	Annapolis river.	Schr.	Stranded.	Stranded.	G. W. Newcombe.	Part, \$100.
Dec.	19	Scotia Queen	112,328			Parrsboro, N.S.	St. John, N.B.	St. John harbour.	Schr.	Stranded.	Stranded.	J. V. Marsters.	Part.
Dec.	20	Senator	80,902			Vancouver, B.C.	English Bay, B.C.	English bay.	Wood	Stranded.	Stranded.	H. Geaur.	Part, \$2,000.
Dec.	24	Sirdar	100,730			Bridgetown, Bdos.	Mobile, Ala.	Lat. 28° 20' N., Lon. 86° 52' W., Gulf of Mexico.	Wood	Foundered.	Foundered.	Chas. McDade.	Total, \$8,000; cargo, \$10,000.
May	2	Tees	95,929			Victoria, B.C.	Port Alberni, B.C.	Alberni canal.	Schr.	Stranded.	Stranded.	E. Gillam.	No damage.
Aug.	15	Texas				Sweden	Newport News, Copenhagen.	360 miles S. of Halifax, North Atlantic	Schr.	Engine damaged.	Engine damaged.	G. Hillstrom.	Part.
Oct.	31	Theodore Roosevelt				American	Gloucester, U.S.A.	Centreville, N.S.	Schr.	Stranded.	Stranded.	Jas. F. Bowie.	Total.
Jan.	12	Uranium	98,663			London, G.B.	Rotterdam, Halifax.	Chebucto head, N.S.	3 mts.	Stranded.	Stranded.	R. Eustace.	Heavy damage.
Aug.	29	Uranium	98,663			London, G.B.	New York	Lat. 40° 41' N., Lon. 66° 53' W., North Atlantic.	3 mts.	Damaged by fire.	Damaged by fire.	T. R. Agassiz.	Part.
Feb.	9	Virginia	20,772			Foreign	Boston, Fishing.	12 miles S.E. of Little Hope.	Schr.	Part of rigging carried away.	Part of rigging carried away.	A. M. Conrad.	Part, \$1,000.



STATEMENT OF WRECKS AND CASUALTIES reported as having occurred to British, Canadian, and foreign vessels in Canadian Waters, and to Canadian Vessels in other Waters, from January 1 to December 31, 1913.—*Continued.*

Date of Casualty.	Name of Ship and Off. No.	Age of Ship, years.	Registered Port.	How rigged. Iron or wood. Steam or Sail.	Register Tonnage.	Port sailed from Port sailed to.	Place where casualty happened.	Particulars of casualty. Name of master.	Lives Lost.	Loss. Total or partial.
April 29	Vipond . . . . .	1	Halifax, N.S. . . . .	Schr. . . . . Wood Sail	17	Halifax. . . . . Halifax.	Off Port Hood har- bour, N.S.	Stranded. . . . . W. A. Martin.	.....	Part., \$5,000.
Sept. 8	Virginian. . . . . 116,330	9	Parrsboro, N.S. . . . .	Schr. . . . . Wood Sail	100	Apple River, N.S. . . . Boston, Mass.	Musquash head, N.B.	Stranded. . . . . Jas. Graham.	....	Part., ship, \$2,000; cargo, \$400.
Dec. 12	Victoria. . . . . 111,409	13	Lunenburg, N.S. . . . .	Schr. . . . . Wood Sail	100	Bridgewater. . . . . New York.	Bay of Fundy. . . . .	Deck load carried away. Capt. Mahoney.	.....	No damage to vessel.
Jan. 9	W. N. Zuricker . . . 111,724	11	Bridgetown, Bdos. . . . .	Schr. . . . . Wood Sail	398.13	Ingram Docks, N.S. . . New York.	75 miles W. S. W. of Cape Sable, N.S.	Waterlogged. . . . . J L. Publicover.	.....	Part.
April 13	W. C. Silver . . . . 116,504	9	Lunenburg, N.S. . . . .	Schr. . . . . Wood Sail	97	Halifax, N.S. . . . . Barbadoes.	Lat. 29° 59' N., Lon. 51° 54' W., North Atlantic.	Foretop mast broken and part of deck load carried away. Art. Crooks.	.....	Part., \$25.
June 9	Wabana. . . . . 131,402	2	Liverpool, G.B. . . . .	Schr. . . . . Steel Steam	2,676	Sydney, N.S. . . . . Quebec.	Off Cloridorme, gulf St. Lawrence.	Stranded. . . . . D. Reside.	.....	Part.
July 23	Weidurg. . . . .	.....	American . . . . .	..... Wood Steam	120	Seattle, Wash. . . . . Seattle, Wash. . . . .	Graham island, Paci- fic ocean.	Stranded. . . . . Otto Holmstrom.	.....	Total.
Sept. 6	Winnie Hazel. . . . 126,133	4	Halifax, N.S. . . . .	Schr. . . . . Wood Sail	68	Fermeuse, Nfld. . . . . Sydney, N.S. . . . .	Lat. 46° 30' N., Lon. 12° 30' W., Louis- burg, N.S.	Destroyed by fire . . . Emm. Ford.	.....	Total, \$4,000.
Sept. 13	Whakatana. . . . . 111,348	13	Plymouth, G.B. . . . .	F. & A. A. . . . . Steel Steam	3,686	London. . . . . Montreal.	Indian cove, St. Lawrence river.	Collided with wharf. J. H. Squired.	.....	Part.
Oct. 22	Wabana. . . . . 131,402	2	Liverpool, G.B. . . . .	Schr. . . . . Steel Steam	2,676	Sydney, N.S. . . . . St. John, N.B.	Sydney harbour. . . . .	Collided with "Annie Roberts."	4 Part.	Part.
Nov. 1	Wanita. . . . . 100,019	16	Windsor, N.S. . . . .	Schr. . . . . Wood Sail	42	St. John, N.B. . . . . Five Islands, N.S.	Off Clark head, N.S.	Stranded. . . . . F. E. McCumber.	.....	Part., \$200.



Nov. 25	W. C. Silver 116,504	9	Lunenburg, N.S.	Schr. Wood Sail	97	Liverpool, N.S. Boston, Mass.	Boston harbour.	Stranded. R. Naughts.	No damage.
Dec. 6	Wanita 100,019	16	Windsor, N.S.	Schr. Wood Sail	42	St John, N.B. Economy, N.S.	Economy river.	Stranded. F. E. McCumber.	No damage.

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INLAND WATERS VESSELS.

June 18	Ada Alice 75,642	35	Toronto, Ont.	.....	.....	Port Carling, Ont.	Damaged by fire.	.....	Part.
July 5	Ames. 14,449	10	Newcastle-on-Tyne.	Steel Steam	1,020	Fort William. Montreal.	Salmon point, lake Ontario.	Stranded. D. A. Chambers.	Part.
Sept. 3	A. E. McKinstry. 129,491	4	Glasgow	Steel Steam	1202, 81	Huron, Ohio. Chicoutimi, P.Q.	Near Alexandria bay	Stranded. A. E. Stinson.	Slight damage.
" 13	Arabian. 100,034	21	Hamilton, Ont.	Steel Steam	770	Montreal. Port Colborne.	Lachine canal	Stranded.	Part.
" 26	Athabaska. 85,764	30	Montreal.	Steel Steam	2348, 98	Fort William. Port McNicholl.	North Pier, Canada Soo locks.	Collided with pier. J. B. Currie.	No damage.
Oct. —	Aberdeen. 100,659	20	Kingston, Ont.	.....	9	.....	Near Crossover light, St. Lawrence river.	Stranded.	No damage.
Nov. —	Acadian. 124,258	5	Glasgow	Iron Steam	1,457	Kingston. Fort William.	Sulphur island, U.S.A.	Stranded. R. McIntyre.	Part, \$40,000.
" 11	A. E. McKinstry. 129,491	4	Glasgow	Steel Steam	1,203	Montreal. Port Arthur.	Head of Murray canal.	Stranded. A. E. Stinson.	Trifling damage.
July 16	Byron Whitaker	23	American.	Schr. Wood Steam	1,388	Montreal. Ashtabula, U.S.A.	Above Lachine pier.	Carried away by current. J. E. Kohwest.	Part.
Aug. 7	Bickerkike. 121,784	24	Ottawa	Steel Steam	864	Montreal. Fort William.	Middle island, lake Huron.	Stranded. D. Charland.	Part.
Oct. 7	Bickerdike. 121,784	24	Ottawa	Steel Steam	864	Fort William. Montreal.	Lachine locks.	Stranded. D. Charland.	Part, \$10,000.
Nov. 19	Belleville. 122,070	8	Montreal.	Iron Steam	607	Montreal. Gananoque.	100 yards E. of Jack Straw light, St. Lawrence river.	Ashore. W. Bloomfield.	Part.
Mar. 24	City of Montreal. 117,073	42	Toronto	Iron Steam	868	.....	Canal basin, Montreal.	Burnt.	Part, \$58,000.



STATEMENT OF WRECKS AND CASUALTIES reported as having occurred to British, Canadian, and Foreign Vessels in Canadian Waters and to Canadian Vessels in other Waters, from January 1 to December 31, 1913.—*Continued.*

Date of Casualty.	Name of Ship and Off. No.	Age of Ship, years.	Registered Port.	How rigged. Iron or wood. Steam or Sail.	Register Tonnage.	Port sailed from. Port bound to.	Place where casualty happened.	Particulars of casualty and Name of Master.	Lives Lost.	Loss. Total or partial.
July 16	Calgary ..... 133,514	1	Newcastle.....	Schr.. Steel	1305.59	Port Colborne ..... Montreal.	Welland canal.....	Collided with "Sena- tor Derbyshire."	.....	Part, \$40.
Aug. 10	Canada.....	13	American.....	Motor Barge Wood	91	Port Johnson..... New York. Quebec.	Cape Charles, St. Lawrence river.	Sprung a leak and sank. H. Goodrow.	.....	Total.
Aug. 27	Charles Gale..... 130,382	9	Amherstburg, Ont.	Tug..... Wood Steam	23	Amherstburg..... Pelee island.	North Dock, lake Erie.	Burnt..... F. J. Hackett.	.....	Total, \$2,500.
Sept. 6	Chickamauga.....	.....	.....	Barge .....	.....	.....	West point of Point Pelee, lake Erie.	.....	.....	.....
" 27	Catherine C..... 116,864	10	Ottawa.....	Tug..... Wood Steam	15.70	Sturgeon Falls, Ont.	Sturgeon river Chan- nel, lake Nipissing	Destroyed by fire... C. Williams.	.....	Total, \$1,000.
Oct. 1	City of London...	.....	American.....	.....	.....	.....	Point Pelee, lake Erie.	Collided with "Jo- seph M. Morrow" and sank.	...	Total.
" 2	Ceylon.....	.....	.....	Barge .....	.....	Port Colborne..... Montreal.	Off Long point, lake Ontario.	Foundered.....	.....	Total.
" 30	Cornwall.. .. 94,889	23	Montreal. ....	Tow .....	285.56	Kingston..... Montreal.	2½ miles below Upper Entrance Cornwall canal.	Foundered..... W. Langevin.	.....	Total, \$5,000.
Nov. 18	Compton .....	.....	.....	..... Wood	.....	.....	West of Lancaster, St. Lawrence river.	Stranded.....	.....	No apparent damage.
" 4	Castlegar..... 130,556	2	Vancouver, B.C...	Tug..... Wood Steam	70.83	Penticton..... Okanagan lake.	Okanagan lake, B.C	Collided with "Sko- okum."	.....	Part.
May 22	Doric..... 116,263	9	Toronto, Ont....	Steel..... Steam	451.55	Fort William ..... Depot Harbour.	Arial rock, Georgian bay.	Sprung a leak. .... S. Hill.	...	Part.
June 17	Donnacona..... 110,383	13	Hamilton .....	Schr..... Steel Steam	1222.3	Port Colborne ... Montreal.	Point Pelee.....	Stranded..... R. Alexander.	.....	Part.



"	21	Fairmount. 112,276	11	Montreal.		1,184			Welland canal.	Struck obstruction.	Part.
Jan.	9	Gifford.							Fraser river.	Stranded.	Part.
Mar.	25	George W. Parkins		American.					Detroit river, Canadian side.	Collided with "Nottingham."	Slight damage.
July	—	Grantham. 75,641	40	St. Catharines, Ont.	Barge. Wood Steam	325	Kingston. Salmon Point.		Outside of Salmon point.	Stranded. J. Donnelly.	Total, \$10,000.
Sept.	5	Germanic. 10,716	15	Collingwood, Ont.	Schr. Wood Steam	676·08	Collingwood. Blind River.		North channel lake Huron.	Collided with "Victoria K." F. G. Moles.	No damage.
Nov.	—	Guido. 126,223	24	Sarnia, Ont.			Toronto Cobourg.		4 miles E. of Cobourg	Stranded.	Total.
"	21	Glenmount. 122,408	6	Montreal.	Schr. Steel Steam	1,246	Port Arthur Depot Harbour.		Indian rock, Georgian bay.	Stranded. H. Peter.	No damage.
"	9	Huronic. 107,168	2	Collingwood, Ont.		2,211			Whitefish bay.	Stranded.	No damage.
May	3	Iron City							St. Clair river.	Collided with "Thomas F. Cole."	Total.
"	2	John Torrent. 122,440	38	Sault Ste. Marie, Ont.	Tug. Wood Steam	27	Richards Landing, Ont.		Richards Landing, lake Huron.	Destroyed by fire.	Total, \$2,000.
July	29	John Sharples. 77,587	10	Port Huron.	Barge Steel Steam	919	Chicoutimi, P. Q. Bic, P. Q.		Chicoutimi	Stranded. H. L. Beauvis.	Part.
Aug.	5	James Carruthers. 134,748	1	Grimsby.	Schr. Steel Steam	97	Prince Rupert "		Digby island.	Collided with wharf.	Slight damage.
Sept.	12	Joseph Touzin. 126,494	14	Montreal.	Scow. Wood Sail	244·08	St. Maurice river. "		St. Maurice R.	Burnt. A. Rondeau.	Part, \$5,000.
Oct.	7	John Duncan.							Duck island.	Sprung a leak.	Part.
Sept.	29	John B. Ketchum.			Barge Steam				Welland canal.	Collided with "Mapleton."	Slight.
Oct.	1	Joseph M. Morrow							Point Pelee, lake Erie.	Collided with "City of London."	Part, \$5,000.
Nov.	10	James Carruthers. 131,090	1	Toronto, Ont.		5606·19	Collingwood Port Colborne.		Lake Huron.	Foundered. W. H. Wright.	24 Total, \$275,000.



STATEMENT OF WRECKS AND CASUALTIES reported as having occurred to British, Canadian, and foreign Vessels in Canadian Waters, and to Canadian Vessels in other Waters, from January 1 to December 31, 1913.—*Continued*

Date of Casualty.	Name of Ship and Off. No.	Age of Ships, years.	Registered Port.	How rigged. Iron or wood. Steam or Sail.	Register Tonnage.	Port sailed from Port bound to.	Place where casualty happened.	Particulars of casualty. Name of master.	Lives Lost.	Loss. Total or partial.
Nov. 9	J. M. Jinks . . . . .	11	Fairport, U.S.A.	Steel Steam	3,381	Duluth, Minn. . . . Midland, Ont.	Beausoleil island, Georgian bay.	Stranded. . . . . W. A. Ashley.	Part.	
June 5	Kenora . . . . . 124,235	6	Glasgow . . . . .	Schr. . . . . 1 Steel Steam	1,274.90	Montreal. . . . . Fort William.	Near Lachine. . . . .	Stranded. . . . . W. Brian.	Part.	Part, ship: \$15,000, cargo, \$4,000.
July 13	Kenora . . . . . 124,235	7	Glasgow . . . . .	Schr. . . . . 1 Steel Steam	1,274.90	Toronto . . . . . Montreal.	Lachine canal. . . . .	Collided with "Fair- mount." . . . . W. Brian.	Part.	
June . .	Lloyd Porter . . . . .	21	Pictou, Ont. . . . .	Steel Steam	379	Montreal. . . . .	Welland canal. . . . .	Struck gates of lock No. 1.	Slight damage.	
Nov. 8	Leafield, . . . . . 97,990	2	Newcastle . . . . .	Steel Steam	922	Sault Ste. Marie. . . . Fort William.	Lake Superior . . . .	Foundered. . . . . C. F. Baker.	23	Total, \$60,000.
Feb. 1	Manitou. . . . . 107,140	11	Goderich, Ont . . . .	Steel Steam	297	Montreal. . . . . Erie, Pa.	Owen Sound, Ont. . . .	Destroyed by fire. . . .	Total.	
May 13	Masaba . . . . . 131,088	22	Toronto. . . . .	Steel Steam	1,267	Montreal. . . . . Erie, Pa.	Welland canal. . . . .	Collided. . . . . J. A. Smith.	Part, \$6,000.	
May 28	Major N. H. Ferry 126,130	19	Kingston . . . . .	Schr. . . . . Wood Sail	1,671.44	Kingston. . . . . Oswego, N.Y.	Mouth of Murray Canal, lake On- tario.	Collided with and sank.	Total, \$2,100.	
June 4	Majestic. . . . . 100,950	19	Collingwood . . . . .	Schr. . . . . Wood Steam	1,073	Montreal. . . . . Toronto.	Half mile W. of Range Pier La- chine.	Collided with bank of canal.	Part, \$1,000.	
July 8	Maggie F. Hally. . . 15,203	23	American. . . . .	Barge . . . . . Wood Sail	108	South Amboy, N.Y. Montreal.	Lock No. 3 Lachine.	Foundered. . . . . H. Bourdon.	Total, ship \$000; cargo \$700.	
July 25	Midland Queen. . . 110,991	12	Midland . . . . .	Schr. . . . . Wood Steam	1,348.97	Toronto. . . . . Montreal.	Lake St. Francis. . . .	Stranded. . . . . W. A. Lavigne.	Part.	
July 27	Midland Queen. . . 110,991	12	Midland . . . . .	Schr. . . . . Wood Steam	1,348.97	Fort William. . . . . Montreal.	Lake St. Louis. . . . .	Stranded . . . . . W. A. Lavigne.	Part.	



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Oct. 20	Mary E. McLachlan.	...	American	...	1,762	...	Black bay, Ont.	Stranded.	...	Total.
Nov. 9	Meaford. 118,815	10	Newcastle.	...	1,201	Port McNicholl. Fort William.	Soo river.	Stranded. W. A. Richmond.	...	No damage.
Nov. 18	Mapleton. 123,961	4	Sunderland, G.B.	...	1,139	Montreal Fort William.	Lake Huron.	Stranded. A. H. Foote.	...	Slight damage.
May 15	Premier. 92,735	26	Toronto.	...	219	...	Corner Ground reef.	Struck a submerged rock.	...	Part.
July ..	Pontiac.	39	American	...	46	Ogdensburg, N.Y. Toronto.	Grand Trunk dock, Toronto.	Damaged by fire.	...	Part, \$500.
Sept. 30	Prince Rupert. 124,260	5	Kingston	...	1,714	Sydney Port Arthur.	St. Mary river.	Collided with "W. D. Ross." O. Sullivan.	...	Part. \$1,200.
Aug. 28	Quinte Queen. 111,665	12	Kingston	...	143	Grenville Ottawa.	Ottawa river.	Stranded	...	No damage.
June 14	Rosemount. 103,565	17	Montreal.	...	989	Fort William. Montreal.	Welland canal.	Collided with canal wall. J. H. G. Crocker.	...	Part, ship \$2,000; cargo, \$1,400.
Sept. 25	Robert Mackay. 107,419	14	Montreal.	...	87	Montreal Montreal.	Montreal harbour.	Sprung a leak. E. Labelle.	...	Slight damage
Nov 9	Regina. 124,281	6	Toronto	...	1,956	Montreal. Port Arthur.	Lake Huron.	Foundered. E. H. McConkey.	45	Total, \$25,000.
May 13	Seguin. 94,763	23	Owen Sound.	...	771	Fort William. Montreal.	Welland canal.	Collided with "Mas aba."	...	Part, \$800.
July 7	St. Laurent. 80,735	33	Montreal	...	189·31	Montreal St. Helen's Island.	Montreal	Collided with "Val- leyfield."	...	Slight damage.
Aug. 20	Stormount. 122,409	6	Montreal.	...	1230'83	Fort William. Montreal.	Lake St. Louis.	Stranded P. E. Tilfer.	...	Part, ship \$14,000; cargo, \$1,000.
Oct. 19	Sligo 72,711	39	Toronto	...	284·11	Point Ann. Toronto.	Off Whitby, lake Ontario.	Tow line parted. D. M. Vicker.	...	No damage.
Nov. 13	Skookum 134,028	1	Victoria, B.C.	...	108·99	Peachland Penticton.	Okanagan lake, B.C.	Collided with "Cas- legar." F. J. Languedoc.	...	Total.
Oct. 1	Thomas Adams.	...	...	...	...	...	Walpole island, Ont.	Stranded	...	No damage.
Oct. 23	Toiler.	3	Newcastle, G.B.	...	1,096	Port Colborne. Montreal.	St. Gabriel lock, Lachine canal.	Struck canal wall. Jas. Dix.	...	Part, \$400.



STATEMENT OF WRECKS AND CASUALTIES reported as having occurred to British, Canadian, and Foreign Vessels in Canadian Waters, and to Canadian Vessels in other Waters, from January 1 to December 31, 1913—*Concluded.*

Dates of Casualty.	Name of Ship and Official No.	Age of Ship, Years.	Registered Port.	How Rigged. Iron or wood, Steam or sail.	Register Tonnage.	Port sailed from. Port bound to.	Place where Casualty Happened.	Particulars of casualty. Name of Master.	Lives Lost.	Loss. Total or partial.
Oct. 11	Thomas H. Cahoon 126,658	32	Midland, Ont.	Barge. Wood	.....	Sault Ste. Marie. Bying inlet.	North channel, Georgian bay.	Stranded. F. McPhail.	.....	Total, \$3,000.
Nov. 8	Turrett Chief. 106,605	17	Newcastle, G.B.	Bque. Iron Steam	1,197	Midland Fort William.	5 miles of Copper Island, lake Superior.	Stranded. The. Padginton.	.....	Total.
July 7	Valleyfield. 69,595	40	Montreal	..... Iron and wood Steam	280·17	St. Helen's island. "	Montreal harbour.	Collided with "St. Laurent." Geo. Marion.	.....	Slight damage.
May 3	Wm. S. Mack. 94,763	12	Fairport, U.S.A.	..... Steel Steam	2,185	Fort William. Fairport, U.S.A.	St. Mary river.	Collided with "Turret Crown." Wm. Morehead.	.....	Part, \$10,000.
June 13	Winnie Wing.	.....	.....	.....	.....	.....	Napanee river.	Collided with mud scow.	.....	Part.
June 29	W. H. Price. 112,332	.....	Collingwood	Tug. Steam	.....	.....	Near Parry Sound.	Destroyed by fire	.....	Total, \$1,500.
July 2	Winnipeg. 122,280	.....	Winnipeg	Barge	.....	.....	Whale back shoal, Ont.	Stranded.	.....	Slight damage.
Sept. 20	W. P. Snyder	.....	.....	.....	.....	.....	Bar point, Ont.	Stranded	.....	No damage.
Nov. 8	Wexford. 87,342	30	London	..... Steel Steam	2,104	Fort William. Goderich, Ont.	Lake Huron	Foundered	18	Total, \$107,000.



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## APPENDIX No. 9.

## ANNUAL REPORT OF THE MASTERS AND SEAMEN BRANCH.

To the Deputy Minister of Marine and Fisheries,  
Ottawa.

SIR,—I have the honour to submit the 1913-14 annual report of this branch.

## GOVERNMENT NAVIGATION SCHOOLS.

During the twelve months ended March 31, 1914, navigation schools were in operation for longer or shorter periods at Quebec, Que., North Sydney and Yarmouth, N.S., St. John, N.B., Collingwood, Ont., and at Vancouver, B.C.

At Quebec, Captain P. L. Lachance, instructor, the school was in operation 240 days. The total attendance was 1,239, an average attendance of over 5 each day.

At North Sydney, Captain James Sutherland, instructor, 27 sessions were held. The total attendance was 147, an average attendance of over 5 at each session.

At Yarmouth, Captain J. E. Murphy, instructor, 31 sessions were held. The total attendance was 588, an average attendance of over 18 at each session.

At St. John, Captain Rufus C. Cole, instructor, the attendance was not so regular owing probably to the fact that the school was a new undertaking at this port.

At Collingwood, Captain Geo. C. Coles, instructor, 32 sessions were held. The total attendance was 588, an average attendance of over 18 at each session.

At Vancouver, Captain Chas. Eddie, instructor, 17 sessions were held. The total attendance was 298, an average attendance of over 17 at each session.

## MASTERS AND MATES.

During the twelve months ended March 31, 1914, three new examiners of masters and mates were appointed, viz., Captain F. N. Malcolm, at Halifax, N.S.; Captain W. R. Bennett, at St. John, N.B.; and Captain J. D. Macpherson, at Victoria, B.C.; and during the same period examinations were reported as follows:—

*Eastern Division.*

At Halifax, N.S., Captain Malcolm, examiner, 48 candidates were examined: 2 for master, 2 for mate, and 3 for second mate, sea-going; 19 for master and 19 for mate, coasting; and 2 for master and 1 for mate, minor waters. Four candidates failed for mate, coasting. One person underwent the sight tests.

At Yarmouth, N.S., Captain Murphy, examiner, 77 candidates were examined: 11 for master, 12 for mate, and 9 for second mate, sea-going; 19 for master and 18 for mate, coasting; 1 for master, inland waters; and 5 for master and 2 for mate, minor waters. Thirteen candidates failed: 3 for master, 5 for mate, and 2 for second mate, sea-going; and 2 for master and 1 for mate, coasting.

At North Sydney, N.S., Captain Sutherland, examiner, 11 candidates were examined: 2 for master and 1 for mate, sea-going; 4 for master and 1 for mate, coasting; and 1 for master and 2 for mate, minor waters. Five candidates failed: 1 for master, sea-going; 2 for master, coasting; and 2 for mate, minor waters.

At St. John, N.B., Captain Bennett, examiner, 2 candidates were examined: 2 for master, minor waters. One person underwent the sight tests.



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At Charlottetown, P.E.I., Captain Cameron, examiner, 14 candidates were examined: 2 for master, coasting; 9 for master and 2 for mate, minor waters; and 1 for temporary certificate.

At Quebec, Que., Captain Lachance, examiner, 100 candidates were examined: 4 for second mate, sea-going; 8 for master and 25 for mate, coasting; 10 for master and 9 for mate, inland waters; 30 for master and 13 for mate, minor waters; and 1 for temporary certificate. Thirty-two candidates failed: 2 for second mate, sea-going; 3 for master and 5 for mate, coasting; 6 for master and 5 for mate, inland waters; and 7 for masters and 4 for mate, minor waters. Seventeen persons underwent the sight tests.

At Montreal, Que., Captain Riley, examiner, 34 candidates were examined: 1 for master, coasting; 5 for master and 5 for mate, inland waters; 16 for master and 1 for mate, minor waters; and 6 for temporary certificates.

#### *Western Division.*

At Vancouver, B.C., Captain Eddie, examiner, 102 candidates were examined: 1 for master, 6 for mate and 7 for second mate, sea-going; 34 for master and 45 for mate, coasting; 4 for master, inland waters; 4 for mate, minor waters; and 1 for temporary certificate. Twenty-five candidates failed: 5 for master and 17 for mate, coasting; 1 for master, inland waters; and 2 for mate, minor waters. One person underwent the sight tests.

At Victoria, B.C., Captain Macpherson, examiner, 24 candidates were examined: 17 for master and 4 for mate, coasting; and 1 for master and 2 for mate, minor waters. One candidate failed for mate, coasting. Thirteen persons underwent the sight tests.

At Nelson, B.C., Lieutenant Hallett, examiner, 12 candidates were examined: 4 for master and 7 for mate, minor waters; and 1 for temporary certificate. Two candidates failed for mate, minor waters.

At Edmonton, Alta., Captain Grant, examiner; 1 candidate was examined for master, minor waters.

#### *Inland Waters Division.*

At Toronto, Ont., Captain King, examiner, 109 candidates were examined: 41 for master and 35 for mate, inland waters, 11 for master and 9 for mate, minor waters; and 13 for temporary certificates. Eighteen candidates failed: 8 for master and 5 for mate, inland waters; and 1 for master and 4 for mate, minor waters. Seven persons underwent the sight tests.

At Collingwood, Ont., Captain Coles, examiner, 52 candidates were examined: 1 for master and 1 for mate, coasting; 15 for master and 25 for mate, inland waters; 3 for master and 5 for mate, minor waters; and 2 for temporary certificates. Seven candidates failed: 1 for master and 5 for mate, inland waters; and 1 for mate, minor waters.

At Kenora, Ont., Captain Phillips, examiner, 4 candidates were examined for temporary certificates.

At West Selkirk, Man., Captain Thordarson, examiner, 8 candidates were examined: 2 for master and 2 for mate, inland waters; and 3 for master and 1 for mate, minor waters.

#### CERTIFICATES ISSUED.

During the year the following numbers and grades of certificates have been issued to masters and mates: 12 masters', 16 mates' and 19 second mates' sea-going certificates of competency; 1 master's and 1 mate's coasting certificates of service; 92 masters' and 84 mates' coasting certificates of competency; 62 masters' and 61



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mates' inland waters certificates of competency; 80 masters' and 34 mates' minor waters certificates of competency; and 29 masters, temporary certificates. A complete list of masters' and mates certificates issued during the year follows.

RECEIPTS AND EXPENDITURE.

The total amount collected in the way of examination fees for certificates during the twelve months ended March 31, 1914, was \$5,558.75, and the amount expended on account of this service was \$13,273.11, an excess of expenditure over receipts of \$7,714.36.

The following statement shows the total receipts and expenditures on account of masters and mates during the last ten years:—

	Expenditure.	Receipts.
	\$ cts.	\$ cts.
For the fiscal year ended June 30, 1905.....	5,884 74	4,643 85
" " June 30, 1906.....	7,068 15	5,526 00
" " March 31, 1907 (nine months).....	5,934 16	2,294 50
" " March 31, 1908.....	11,508 31	4,306 05
" " March 31, 1909.....	8,244 56	4,192 50
" " March 31, 1910.....	6,662 52	4,314 50
" " March 31, 1911.....	5,801 62	4,446 61
" " March 31, 1912.....	7,226 54	3,970 00
" " March 31, 1913.....	9,992 66	3,639 06
" " March 31, 1914.....	13,273 11	5,558 75
Expenditure.....	81,596 37	42,891 82
Receipts.....	42,891 82	
Excess of expenditure over receipts.....	38,704 55	

I have the honour to be, sir,

Your obedient servant,

B. F. BURNETT,

Officer in Charge,

Masters and Seamen Branch.

MASTERS AND SEAMEN BRANCH,  
DEPARTMENT OF MARINE AND FISHERIES,  
OTTAWA, April 1, 1914.



LIST of Sea-going Certificates of Competency issued to Masters, Mates and Second Mates, during the twelve months ended March 31, 1914.

No. of Certi- ficate.	Date of Certificate	Name.	Grade.	Address.	Where Examination was Passed.	Fee.
	1913.					\$ cts.
3986	April 24..	Maynard Fielden. . . . .	Master.....	New York, U.S.A....	Yarmouth, N.S..	15 00
3987	" 24..	Joseph Mills.....	2nd Mate...	Brixham, Devon. ....	Vancouver, B.C ..	8 00
3988	" 24..	Maurice N. Barkhouse..	" ....	Kingsport, N.S. ....	Yarmouth.....	8 00
3989	May 9..	Andrew Mercer. ....	Mate. ....	Edinburgh, Scotland..	Vancouver, B.C ..	8 00
3990	" 9..	William Douglas Ryan..	2nd Mate...	San Francisco, U.S.A..	" ..	8 00
3991	" 9..	Erastus E. Larkin ....	" ....	Pubnico, N.S.....	Yarmouth, N.S....	8 00
3992	" 22..	James J. Burke.....	" ....	St. John, N.B.....	" ..	8 00
3993	" 30..	John Douglas Lane. ....	Mate... ..	Vancouver, B.C .....	Vancouver, B.C ..	8 00
3994	June 10..	Percy Ware ....	" .....	Sydney, N.S.....	North Sydney,N.S	8 00
3995	" 17..	Beecher P. Powell..	" .....	Yarmouth, N.S.....	Yarmouth, N.S....	8 00
3996	" 17..	Richard Charles Lechner	Master. ....	New Jersey, U.S.A....	" ..	15 00
3997	" 25..	Alphonse George Gleeson	Mate .....	New York, U.S.A ....	" ..	8 00
3998	July 2..	James Edward Smith. ..	Master.....	Hantsport, N.S.....	" ..	15 00
3999	" 14..	William Stanley Gordon.	2nd Mate. .	Charlottetown, P.E.I..	" ..	8 00
4000	" 18..	John Grosset.. . . . .	Mate.....	Dundee.....	Vancouver, B.C ..	8 00
4001	" 21..	Foster Bullerwell.....	" .....	Parrsboro, N.S.....	Yarmouth, N.S....	8 00
4002	Aug. 11..	Charles Edward Slater..	Master.. .	New York, U.S.A ....	" ..	15 00
4003	" 13..	Hugh MacCallum. ....	Mate.....	Port Pirie, South Aust.	Vancouver, B.C ..	8 00
4004	" 21..	Henry John Perks.....	2nd Mate...	New York, U.S.A....	" ..	8 00
4005	" 27..	Andrew Brown. ....	Master.....	Brooklyn, N.Y.....	Yarmouth, N.S....	15 00
4006	Sept. 26..	William McWhinnie....	Mate.....	New York, U.S.A. ....	" ..	8 00
4007	" 26..	Arthur Ellis . . . . .	Master.....	Sydney, N.S.....	" ..	15 00
4008	" 26..	Donald Campbell. ....	" .....	Skye, Scotland.....	Vancouver, B.C ..	15 00
4009	" 26..	Charles Hunt Gowing...	2nd Mate...	Bellesdon, Norwich, Eng.	" ..	8 00
4010	" 26..	Hugh C. Warner. . . . .	Mate.....	Bridgewater, N.S.....	Yarmouth, N.S....	8 00
4011	" 26..	David Oswald Davies...	Master.....	Bronaub New qu ay, Wales.	North Sydney,N.S	15 00
4012	Oct. 7..	William Thomas Morgan	2nd Mate...	Salmon Cove, Nfld....	Halifax, N.S. ....	8 00
4013	" 17..	Cecil Claxton.....	Mate.....	Middle Temple, Lon- don, Eng.	Vancouver, B.C ..	8 00
4014	" 21 .	Alexander H. Birks.....	Master.....	B ston, Mass.....	Yarmouth, N.S....	15 00
4015	" 21..	John V. Redmond.....	2nd Mate...	New York, U.S.A....	" ..	8 00
4016	" 27..	James Duffy. ....	Mate... ..	San Francisco, U.S.A..	Vancouver, B.C....	8 00
4017	Nov. 6..	Walter Denson. ....	" .....	New York, U.S.A ....	Yarmouth, N.S....	8 00
4018	" 18..	Frederick Charles Weeks	" .....	Vancouver, B.C .....	Vancouver, B.C ..	8 00
4C19	Dec. 1 .	Thomas Ainsley Ensor..	Master.....	New York, U.S.A....	Yarmouth, N.S....	15 00
4020	" 1..	Albert Haithwaite Gard- ner.	" - ...	Seacombe, Eng. . . .	Halifax, N.S .....	15 00
4021	" 1..	Thomas Campbell Ban- nerman.	2nd Mate...	Halifax, N.S .....	" .....	8 00
4022	" 4..	James Sinclair.....	" .....	Yarmouth, N.S....	Yarmouth, N.S....	8 00
4023	" 4 .	Leslie Kenneth G. Joss..	" .....	Vancouver, B.C.....	Vancouver, B.C ..	8 00
4024	" 4..	Alexander Sullivan.....	" .....	Liverpool, Eng .....	" ..	8 00
	1914.					
4025	Feb. 16 .	George Hayes . . . . .	Master.....	Halifax, N.S .....	Halifax, N.S .....	15 00
4026	" 24..	Alfred Joseph Creer ....	2nd Mate...	Vancouver, B.C .....	Vancouver, B.C ..	8 00
4027	" 24 .	Herbert William Doyle .	Mate. ....	Halifax, N.S .....	Halifax, N.S .....	8 00
4028	" 27..	Charlie George Brinkman	" .....	" .....	" .....	8 00
4029	Mar. 5..	William Wallace Mar- shall.	2nd Mate...	Clifton, N.S.....	" .....	8 00
4030	" 5..	Joseph Florian Lacombe.	" ..	Montmagny, P.Q.....	Quebec, P.Q ....	8 00
4031	" 23..	Antoine Fournier.....	" .....	St. Jean Port Joli, P.Q.	" .....	8 00
4032	" 23..	Maurice Geldert.....	Mate. ....	Lunenburg, N.S .....	Yarmouth, N.S....	8 00



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LIST OF CERTIFICATES OF COMPETENCY issued to Masters and Mates of Coasting and Inland Vessels during the twelve months ended March 31, 1914.

No. of Certificate.	Date of Certificate.	Name.	Grade.	Address.	Where Examination was Passed.	Fee.
	1913.					\$ cts.
7039	April 16..	Thomas R. McLeod.....	Mate.....	Keady, Ont.....	Collingwood, Ont..	6 00
7040	" 16..	Anson Burke Smith.....	" .....	Midland, Ont.....	" ..	6 00
7041	" 16..	William Thomas Bonnett ..	" .....	Windsor, Ont.....	" ..	6 00
7042	" 16..	Walter John Willett.....	Master.....	Parry Sound, Ont.....	" ..	15 00
7043	" 16..	Joseph Eudor Houde ....	" .....	St. Antoine, P.Q.....	Quebec, P.Q.....	15 00
7044	" 16..	Joseph Emile Fortin.....	Mate.....	Cap St. Ignace, P.Q..	" .....	6 00
7045	" 16..	Russell Coffin.....	" .....	York Centre Gaspe, P.Q.	" .....	6 00
7046	" 16..	Cyrille Pouliot.....	" .....	Chateau Richer, P.Q..	" ..	6 00
7047	" 16..	Asa McLeod .....	Master.....	Chatham, N.B.....	Charlottetown, P.E.I.	15 00
7048	" 16..	Carl August Goodwin....	" .....	Baie Verte, N.B.....	" ..	15 00
7049	" 16..	Daniel Brennan.....	" .....	Charlottetown, P.E.I..	" ..	15 00
7050	" 16..	John Guy .....	" .....	St. John, N.B .....	Yarmouth, N.S....	15 00
7051	" 16..	Bruce Verner Weston....	" .....	" .....	" ..	15 00
7052	" 16..	Frederick A. Turner.....	" .....	Marie Joseph, N.S....	" ..	15 00
7053	" 16..	Charles Marvin Fraser..	" .....	Edwardsville, N.S....	North Sydney, N.S.	15 00
7054	" 16..	John Theodore Dicks....	Master.....	North Sydney, N.S....	North Sydney, N.S.	15 00
7055	" 16..	Roderick MacKenzie ..	" .....	South Vancouver, B.C.	Vancouver, B.C ..	15 00
7056	" 16..	James Flood.....	Mate.....	Victoria, B.C.....	Victoria, B.C.....	6 00
7057	" 16..	Edward Sloane .....	Master.....	Vancouver, B.C ..	Vancouver, B.C ..	15 00
7058	" 16..	Irving C. Foster .....	Mate.....	Smiths Falls, Ont.....	Toronto, Ont.....	6 00
7059	" 16..	William Garriock.....	Master.....	Port Arthur, Ont.....	Port Arthur, Ont..	15 00
7060	" 16..	William Alexander .....	" .....	Nipigon, Ont.....	" ..	15 00
7061	" 16..	Arthur Watson.....	" .....	Corunna, Ont .....	" ..	15 00
7062	" 16..	Henry Louis Gehl .....	" .....	Port Arthur, Ont.....	" ..	15 00
7063	" 16..	William Hyland.....	Mate. . . .	Sault Ste. Marie, Ont..	Sault Ste. Marie, Ont .....	6 00
7064	" 16..	George Andrew Bridge..	Master.....	" ..	Sault Ste. Marie, Ont .....	15 00
7065	" 16..	Joseph Hobbs .....	" .....	" ..	Sault Ste. Marie, Ont .....	15 00
7066	" 16..	Allan McAulay.....	Mate... ..	Goderich, Ont .....	Goderich, Ont ....	6 00
7067	" 16..	Bert MacLean.....	" .....	" .....	" .....	6 00
7068	" 16..	John Parker .....	" .....	Warton, Ont.....	Toronto, Ont.....	6 00
7069	" 16..	Harold F. Randall.....	Master.....	Seeley's Bay, Ont.....	" .....	15 00
7070	" 16..	Frederick John Marigold ..	" .....	Toronto, Ont.....	" .....	15 00
7071	" 16..	William Alfred Geddes..	Mate.....	" .....	" .....	6 00
7072	" 16..	David Bourgault.....	Master.....	St. Roch des Aulnaies, P.Q.....	Quebec, P.Q.....	15 00
7073	" 16..	John Theodore Dicks....	Mate.....	North Sydney, N.S....	North Sydney, N.S.	6 00
7074	" 24..	Robert Patterson.....	Master.....	Kingston, Ont.....	Toronto, Ont.....	15 00
7075	" 24..	Frank Edgar Smith.....	" .....	Yarmouth, N.S.....	Yarmouth, N.S....	15 00
7076	" 24..	John P. Shears .....	" .....	St. John, N.B.....	" ..	15 00
7077	" 24..	Wm. Warden Dauphinee	Mate. ....	French Village, N.S..	Halifax, N.S.....	6 00
7078	" 24..	Charles Barker Smith...	Master.....	Vancouver, B.C .....	Vancouver, B.C....	15 00
7079	" 24..	Gabriel Lachance.....	Mate.....	St. Jean Isle D'Orleans, P.Q.....	Quebec, P.Q.....	6 00
7080	" 24..	Ernest Pouliot.....	" .....	Chateau Richer, P.Q..	" .....	6 00
7081	" 24..	Bastien Anctil.....	" .....	Montcalmville, P.Q....	" .....	6 00
7082	" 24..	Joseph Adelard Bernier ..	" .....	Quebec, P.Q.....	" .....	6 00
7083	" 24..	Jean Baptiste Gamache..	" .....	L'Islet, P.Q.....	" .....	6 00
7084	" 24..	Joseph Nap. Riverin....	" .....	Pointe à Pic Malbaie, P.Q..	" .....	6 00
7085	" 24..	George Duguay.....	" .....	Pointe a Pic Malbaie, P.Q.....	" .....	6 00
7086	" 24..	Diogene Couillard .....	" .....	" .....	" .....	6 00
		Despres .....	Master.....	Montmagny, P.Q.....	" .....	15 00
7087	April 24..	William P. Tinkiss.....	Master... ..	Bracebridge, Ont.....	Toronto, Ont.....	15 00
7088	" 24..	Jack Finlator Nicholles.	Mate. . .	Victoria, B.C. ....	Victoria, B.C.....	6 00
7089	" 24..	John Alexander MacDonald.	" .....	Vancouver, B.C. ....	" .....	6 00
7090	" 24..	John Frederick Sowards.	Master .....	Kingston, Ont.....	Montreal, Que....	15 00
7091	" 24..	Arnold Robert Henry...	" .....	Prescott, Ont.....	" .....	15 00



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LIST of Certificates of Competency issued to Masters and Mates of Coasting and Inland Vessels during the twelve months ended March 31, 1914.—*Continued.*

No. of Certificate.	Date of Certificate.	Name.	Grade.	Address.	Where Examination was Passed.	Fee.
	1913.					\$ cts.
7092	April 24..	Alphonse Robinault.....	Master.....	Valleyfield, Que.....	Montreal, Que.....	15 00
7093	" 24..	Joseph Oscar Sicotte.....	Mate.....	Valleyfield, P.Q.....	".....	6 00
7094	" 24..	George Daniel Lewis.....	Master.....	Loggieville, N.B.....	Chatham, N.B....	15 00
7095	" 24..	Robert Allison.....	".....	North Esk, N.B.....	Newcastle, N.B....	15 00
7096	" 24..	Alvan Vye.....	".....	South Nelson Road, N.B.	".....	15 00
7097	" 24..	Rowland Waldo Crocker	".....	Newcastle, N.B.....	".....	15 00
7098	" 24..	Enmund Clemous Crocker	".....	Newcastle, N.B.....	".....	15 00
7099	" 29..	Peter J. Wilcox.....	".....	Louisburg, N.S.....	Yarmouth, N.S....	15 00
7100	" 29..	Oscar Leblanc.....	Mate.....	St. Zotique, P.Q.....	Montreal, P.Q....	6 00
7101	" 29..	Napoleon Mathurin.....	".....	Quebec, P.Q.....	Quebec, P.Q.....	6 00
7102	" 29..	David John Gardner.....	".....	Halifax, N.S.....	Yarmouth, N.S....	6 00
7103	" 29..	Oscar Mercier.....	Master..	Berthier, P.Q.....	Montreal, P.Q....	15 00
7104	" 29..	Vincent Thomas McEachran.	Mate.....	Nelson, N.B.....	Chatham, N.B....	6 00
7105	" 29..	Patrick John McCarthy.	Master.....	Chatham, N.B.....	".....	15 00
7106	" 29..	Ernest Tufts.....	".....	St. John, N.B.....	Yarmouth, N.S....	15 00
7107	May 9..	Robert Byers.....	".....	Spanish, Ont.....	Collingwood, Ont.	15 00
7108	" 9..	Alex. McKay.....	Mate.....	Selkirk, Man.....	West Selkirk, Man.	6 00
7109	" 9..	James Alexander Menagh	Master.....	Smith's Fall's, Ont...	Toronto, Ont.....	15 00
7110	" 9..	John Simard.....	Mate.....	Limoilou, P.Q.....	Quebec, P.Q.....	6 00
7111	" 9..	Samuel Rioux.....	Master.....	Quebec, P.Q.....	".....	15 00
7112	" 9..	Francis Xavier Laviolette	".....	Montreal, P.Q.....	Montreal, P.Q....	15 00
7113	" 9..	Patrick Delaney.....	Mate.....	Chatham, N.B.....	Charlottetown, P.E.I.	6 00
7114	" 10..	Louis Henri Dufour.....	Master.....	Chicoutimi, P.Q.....	Quebec, P.Q.....	15 00
7115	" 14..	Richard Joseph A. Harding.	Mate.....	Vancouver, B.C.....	Vancouver, B.C....	6 00
7116	" 14..	Hans Magnus Furustad.	Master.....	".....	".....	15 00
7117	" 14..	Hans Magnus Furustad.	Mate.....	".....	".....	6 00
7118	" 14..	John Wolstenholme Dreyer.	".....	".....	".....	6 00
7119	" 14..	Rufus J. Weldon.....	Master.....	St. John West, N.B...	Yarmouth, N.S....	15 00
7120	May 14..	Archie Ward.....	Master.....	St. John, N.N.....	Yarmouth, N.S....	15 00
7121	" 14..	William John Shanahan.	".....	Nelson, N.B.....	Chatham, N.B....	15 00
7122	" 14..	Alexander Rainsborough	".....	Chatham, N.B.....	".....	15 00
7123	" 19..	William Shearer.....	".....	Campbellton, N.B....	Yarmouth, N.S....	15 00
7124	" 22..	Theodore Gordon G. Mahon.	Mate.....	Procton, B.C.....	Nelson, B.C.....	6 00
7125	" 22..	Simon Kenneth Fraser..	Master.....	Amherstburgh, Ont...	Toronto, Ont.....	15 00
7126	" 22..	Joseph Doyle.....	".....	Vancouver, B.C.....	Vancouver, B.C....	15 00
7127	" 22..	Adrien Poitras.....	Mate.....	Montreal, P.Q.....	Quebec, P.Q.....	6 00
7128	June 2..	William Lawrence Yates	Master.....	Vancouver, B.C.....	Vancouver, B.C....	15 00
7129	" 2..	Alcide Talbot.....	Mate.....	Berthier, P.Q.....	Quebec, P.Q.....	6 00
7130	" 2..	Ulderic Lemieux.....	Master.....	Levis, P.Q.....	".....	15 00
7131	" 2..	Howard B. Golding.....	".....	North Wharf, St. John, N.B.	Yarmouth, N.S....	15 00
7132	" 10..	James Fitzgerald.....	".....	St. John, N.B.....	".....	15 00
7133	" 10..	Wilfrid Robidoux.....	".....	Yamaska, Que.....	Montreal, Que.....	15 00
7134	" 10..	Omer Pothier.....	".....	Aylmer, P.Q.....	".....	15 00
7135	" 10..	Omer Pothier.....	Mate.....	".....	".....	6 00
7136	" 10..	Amedée Caron.....	Master.....	L'Islet, P.Q.....	Quebec, P.Q.....	15 00
7137	" 13..	Ralph William Carthew.	Mate.....	Victoria, B.C.....	Victoria, B.C....	6 00
7138	" 16..	Joseph Bibeau.....	Master.....	St. Anne de Sorel, P.Q.	Montreal, P.Q....	15 00
7139	" 19..	James Cunningham.....	Master.....	Victoria, B.C.....	Victoria, B.C....	15 00
7140	" 25..	Richard Trist.....	".....	Dryden, Ont.....	West Selkirk, Man	15 00
7141	" 25..	Richard Whiteman.....	".....	".....	".....	15 00
7142	" 25..	Stanley Maynard.....	".....	Okanagan Landing, B.C.	Nelson, B.C.....	15 00
7143	" 25..	Henry James Stacey.....	".....	Vancouver, B.C.....	Vancouver, B.C....	15 00
7144	" 25..	Charles Savard.....	".....	Chicoutimi, P.Q.....	Quebec, P.Q.....	15 00
7145	July 2..	William Henry S. McDonald.	".....	Selkirk, Man.....	West Selkirk, Man	15 00
7146	" 2..	William Henry S. McDonald.	Mate.....	".....	".....	6 00



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LIST of Certificates of Competency issued to Masters and Mates of Coasting and Inland Vessels during the twelve months ended March 31, 1914—*Continued.*

No. of Certificate.	Date of Certificate	Name.	Grade.	Address.	Where Examination was Passed.	Fee.
	1911.					\$ cts.
7147	July 2..	Frederick Cogle.....	Master.....	Proctor, B.C.....	Nelson, B.C.....	15 00
7148	" 2..	Frank Wood .....	" .....	Woods Harbour, N.S..	Yarmouth, N.S....	15 00
7149	" 2..	Thomas Watt Weir.....	" .....	Cushing, P.Q .....	Montreal, P.Q.....	15 00
7150	" 11..	William McKillop .....	" .....	Vancouver, B.C.....	Vancouver, B.C..	15 00
7151	" 11..	William McKillop .....	Mate.....	" .....	" .....	6 00
7152	" 11..	John Fraser Crichton ...	Master.....	New Westminster, B.C.	" .....	15 00
7153	" 11..	James Edward Langue- doc.....	" .....	Gaspe Basin, P.Q....	Quebec, P.Q.....	15 00
7154	" 11..	James Henry Simpson ..	Master.....	Brockville, Ont.....	Montreal, Que....	15 00
7155	" 11..	Colland Massicotte .....	" .....	Ste. Genevieve, Ont...	" .....	15 00
7156	" 16..	James Ruxton McKay..	Mate. ....	Victoria, B.C.....	Vancouver, B.C....	6 00
7157	" 21..	Donat Beaudet.....	Master.. ...	Montreal, P.Q.....	Montreal, Que ...	15 00
7158	" 28..	John Wilson.....	Mate.. ....	Kenora, Ont.....	West Selkirk, Man	6 00
7159	" 28..	Thomas Lake Vandusen.	Master.....	Picton, Ont.....	Kingston, Ont....	15 00
7160	" 28..	William Le Feuvre Che- valier.....	Mate.....	Vancouver, B.C. ....	Vancouver, B.C..	6 00
7161	" 28..	Harold Earnest Brown..	Master.....	Lake Port, Ont.....	Kingston, Ont. ...	15 00
7162	" 31..	Milton Janes. ....	Mate.....	Port Dover, Ont.....	Collingwood, Ont.	6 00
7163	" 31..	Vincent Laforest.....	Master.....	Ile de St. Ignace de Loyola. ....	Montreal, Que....	15 00
7164	Aug. 11.	Neil Perceval... ..	" .....	South Vancouver, B.C.	Vancouver, B.C..	15 00
7165	" 13..	James Banaghan.....	Mate.....	New Westminster, B.C	" .....	6 00
7166	" 13..	Frederick E. Williams ..	" .....	Halifax, N.S.....	Yarmouth, N.S....	6 00
7167	" 13..	James F. Berry.....	" .....	Annapolis, N.S. ...	" .....	6 00
7168	" 18..	Angus McDonald.....	" .....	Nelson, B.C.....	Nelson, B.C.....	6 00
7169	" 18..	Donald McKinnon.....	" .....	Vancouver, B.C. ....	Vancouver, B.C..	6 00
7170	" 18..	Joseph Edmond DeVil- lers .....	" .....	Lotbinière, P.Q.....	Quebec, Que.....	6 00
7171	" 25..	David Henry Armit....	Master.....	Fort Frances, Ont ...	West Selkirk, Man	15 00
7172	" 25..	Darius Smith.....	" .....	West Vancouver, B.C..	Vancouver, B.C..	15 00
7173	" 25..	Ernest Vezina.....	Mate.....	Bellechasse, P.Q. ....	Quebec, Que .....	6 00
7174	" 27..	Stephen Carlson.....	Master.. ...	East Vancouver, B.C.	Vancouver, B.C..	15 00
7175	" 27..	Harold F. Henry.....	Mate.....	Halifax, N.S.....	Yarmouth, N.S. ...	6 00
7176	" 27..	William Herbert Ransom	Master.....	King, Ont .....	Toronto, Ont.....	15 00
7177	" 27..	George Cecil Cleveland..	Mate. ....	Halifax, N.S.....	Yarmouth, N.S....	6 00
7178	" 27..	Reid W. Lewis .....	Master.....	St. John, N.B. ....	" .....	15 00
7179	" 28..	Charles A. deLachevro tière. ....	Mate.....	Lotbiniere, P.Q.....	Quebec, Que .....	6 00
7180	" 29..	James H. Wagner .....	Master.....	Port Mouton, N.S....	Yarmouth, N.S....	15 00
7181	Sept. 30..	Albert Lachance.....	Mate.....	Quebec, P.Q.....	Quebec, Que .....	6 00
7182	" 30..	Reginald V. McQueen ..	Master.....	Sandwich, Ont.....	Collingwood, Ont.	15 00
7183	" 30..	Arthur F. Thompson...	Mate.....	Beaumaris, Ont.....	" .....	6 00
7184	" 30..	Zenon Laforest.....	Master.....	St Joseph de Sorel, P.Q	Montreal, Que. ...	15 00
7185	" 30..	Paul Lavallée .....	" .....	Ste. Anne de Sorel, P.Q	" .....	15 00
7186	" 30..	John Simpson.....	Mate. ....	Penticton, B.C., ...	Nelson, B.C .....	6 04
7187	Sept. 30..	Murdock Campbell.....	Mate.....	Stornoway, Sask.....	Nelson, B.C .....	6 00
7188	" 30..	William Crawford .....	Master.....	West Selkirk, Man....	West Selkirk, Man	15 00
7189	" 30..	Charles Edward Wood- roffe.....	" .....	Bardendale, Ont.....	Toronto, Ont. ....	15 00
7190	" 30..	Andrew Sinclair .....	" .....	Victoria, B.C.....	Vancouver, B.C. ...	15 00
7191	" 30..	Wm. P. Billington.....	Mate.....	Victoria, B.C.....	Vancouver, B.C. ...	6 00
7192	" 30..	Duncan MacKinnon .....	" .....	Vancouver, B.C.....	Vancouver, B.C. ...	6 00
7193	" 30..	Francois Joseph Beaudry	" .....	Ste. Anne de la Pérade	Quebec, P.Q.....	6 00
7194	" 30..	Asa Howard Myers.....	" .....	Halifax, N.S.....	Halifax, N.S. ....	6 00
7195	" 30..	George Thomas Smith...	Master.....	Halifax, N.S.....	Halifax, N.S....	15 00
7196	" 30..	Michael Kane .....	" .....	Halifax, N.S.....	Halifax, N.S. ...	15 00
7197	" 30..	Howard Whitman Faulk- ner.....	Mate.....	Halifax, N.S.....	Halifax, N.S.....	6 00
7198	" 30..	William Hurley.....	Master.....	St. John, N.B.....	Yarmouth, N.S....	15 00
7199	" 30..	John P. Shears.....	Mate.....	St. John, N.B.....	Yarmouth, N.S....	6 00
7200	" 30..	Percy Byron Belyea.....	Master.....	St. John, N.B.....	Yarmouth, N.S....	15 00
7201	" 30..	Charles R. Teed.....	" .....	Freeport, N.S.....	Yarmouth, N.S....	15 00
7202	Oct. 9..	Edward Harpin .....	Mate.....	St. Ours, P.Q .....	Montreal, P.Q.....	6 00



5 GEORGE V., A. 1915

LIST of Certificates of Competency issued to Masters and Mates of Coasting and Inland vessels during the twelve months ended March 31, 1914—*Continued.*

No. of Certificate.	Date of Certificate.	Name.	Grade.	Address.	Where Examination was Passed.	Fee.
	1913.					\$ cts.
7203	Oct. 14..	Arthur Deschenes.....	Master.....	Tadousac, P.Q.....	Quebec, P.Q.....	15 00
7204	" 17..	Harold Hansen.....	" .....	Vancouver, B.C.....	Vancouver, B.C...	15 00
7205	" 21..	Charles A. Mahoney....	" .....	Jones Falls, Ont.....	Quebec, P.Q.....	15 00
7206	" 22..	John Campbell.....	" .....	New Westminster, B.C.	Vancouver, B.C..	15 00
7207	" 27..	Even Nilson .....	Mate.....	Yarmouth, N.S.....	Yarmouth, N.S...	6 00
7208	" 27..	Raymond V. Comean....	" .....	Metaghan, N.S.....	Yarmouth, N.S...	6 00
7209	" 27..	Francois Xavier Lachance	Master.....	Quebec, Q.....	Quebec, Q.....	15 00
7210	" 27..	Joseph Montpetit. ....	" .....	Valleyfield, P.Q.....	Montreal, P.Q....	15 00
7211	" 27..	Stanley Allison Hutchin- son. ....	" .....	Rexton, N.B. ....	Yarmouth, N.S...	15 00
7212	" 27..	Lemuel Lohnes.....	" .....	Riverport, N.S.....	Halifax, N.S.....	15 00
7213	" 27..	Joseph Dechenes.....	Mate.....	Quebec, P.Q.....	Quebec, P.Q.....	6 00
7214	Nov. 6..	Joseph Houde.....	" .....	St. Jean Dechailons, P.Q.	Quebec, P.Q.....	6 00
7215	" 6..	Alexander Geddes .....	Master.....	Hamilton, Ont.....	Montreal, P.Q....	15 00
7216	" 6..	James Dennis Mahoney.	" .....	Kingston, Ont.....	Montreal, P.Q....	15 00
7217	" 6..	Neil MacLean .....	" .....	Victoria, B.C.....	Victoria, B.C....	15 00
7218	" 6..	John Joseph Moore.. ...	" .....	Victoria, B.C.....	Victoria, B.C....	15 00
7219	" 6..	Patrick McManus.....	" .....	Vancouver, B.C.....	Vancouver, B.C..	15 00
7220	Nov. 6..	Murray Dryburgh.....	Master.....	West Vancouver, B.C.	Vancouver, B.C..	15 00
7221	" 13..	Turner Ingalls, jr.....	Mate.....	Seal Cove Grand, N.B.	Yarmouth, N.S..	6 00
7222	" 18..	Daniel Lambert .....	Master.....	Victoria, B.C.....	Victoria, B.C....	15 00
7223	" 18..	John MacKinnon.....	Mate.....	Proctor, B.C.....	Nelson, B.C.....	6 00
7224	" 18..	Avard William McCulloch.	Master.....	Pendicton, B.C.....	" .....	15 00
7225	" 18..	William Alexander Tullock.	" .....	Kingston, Ont....	Quebec, P.Q....	15 00
7226	" 22..	Kenneth Kerr.....	Mate.....	St. John, N.B.....	Yarmouth, N.S...	6 00
7227	" 27..	Jonson Ardghar Gilchrist.	Master.....	Vancouver, B.C.....	Vancouver, B.C..	15 00
7228	" 27..	Jonson Ardghar Gilchrist.	Mate.....	" .....	" .....	6 00
7229	" 27..	Havelock Brundige.....	Master. ....	" .....	" .....	15 00
7230	" 27..	John Anderson.....	" .....	Victoria, B.C.....	Victoria, B.C....	15 00
7231	" 27..	Frank Gosse.....	" .....	" .....	" .....	15 00
7232	" 28..	Achille Paradis.....	Mate. ....	Ste. Luce, P.Q.....	Montreal, P.Q....	6 00
7233	Dec. 2..	John Erickson.....	Master.....	Victoria, B.C.....	Victoria B.C....	15 00
7234	" 2..	Vincent George Henry..	" .....	Port Dufferin, N.S....	Halifax, N.S.....	15 00
7235	" 5..	Lewis Angus Beck.....	" .....	Westminster, B.C....	Victoria, B.C....	15 00
7236	" 6..	Henry Temple Day. ....	Mate.....	Upper Gagetown, N.B.	Yarmouth, N.S...	6 00
7237	" 6..	Theodore Vallis.....	Master.....	St. John, N.B.....	" .....	15 00
7238	" 9..	Arthur Thomas.....	Mate.....	Vancouver, B.C.....	Vancouver, B.C..	6 00
7239	" 9..	Joseph Houde .....	Master.....	St. Jean Deschailons, P.Q.	Quebec, P.Q.....	15 00
7240	" 9..	James Harold Hiechie ..	" .....	Chester, N.S.....	Halifax, N.S.....	15 00
7241	" 15..	David Lloyd Jones.....	" .....	Kelowna, B.C.....	Nelson, B.C.....	15 00
7242	" 15..	Alton Ingalls.....	" .....	New Westminster, B.C.	Victoria, B.C....	15 00
7243	" 15..	Joseph Vezina.....	" .....	St. Michel, P.Q.....	Quebec, P.Q.....	15 00
7244	" 15..	Harry Duncan.....	" .....	Vancouver, B.C.....	Vancouver, B.C..	15 00
7245	" 15..	Harry Duncan.....	Mate.....	" .....	" .....	6 00
7246	" 17..	Arthur Jefferys.....	Master.....	Brantford, Ont.....	Toronto, Ont.....	15 00
7247	" 17..	Charles E. Graham .....	Mate.....	Fenelon Falls, Ont....	" .....	6 00
7248	" 19..	Richard Fleming.....	Master.....	Kingston Junction, Ont.	" .....	15 00
7249	" 20..	Joshua Gallop .....	Mate.....	Halifax, N.S.....	Halifax, N.S.....	6 00
7250	" 29..	Charles Mercier.....	Master.....	Rivière Ouelle, P.Q...	Quebec, P.Q.....	15 00
7251	" 29..	Donat Lemay .....	" .....	St. Jean Deschailons, P.Q.	" .....	15 00
7252	" 29..	Oliva Laroche .....	" .....	" .....	" .....	15 00
7253	Dec. 29..	Jean Benoit Deslauriers.	Master. ....	Quebec, P.Q.....	Quebec, P.Q.....	15 00
7254	" 29..	Louis Gonzague.....	Mate.....	Ste. Luce, P.Q.....	" .....	6 00
7255	" 29..	Robert Orr McLeod.. ..	Master. ....	Picton, Ont.....	Montreal, P.Q....	15 00
7256	" 29..	Hector Larosee.....	" .....	Verdun, P.Q.....	" .....	15 00
7257	" 29..	Alarie Blanchet.....	Mate.....	Lotbinière, P.Q.....	" .....	6 00
7258	" 29..	Prudent Boivin.....	Master. ....	St. Fulgence, P.Q.....	" .....	15 00



## SESSIONAL PAPER No. 21

LIST of Certificates of Competency issued to Masters and Mates of Coasting and Inland Vessels, during the twelve months ended March 31, 1914—*Continued.*

No. of Certificate	Date of Certificate.	Name.	Grade.	Address.	Where Examination was Passed.	Fee.
	1914.					\$ cts.
7259	Dec. 29.	Frank Clarence Polley ..	Master.....	Vancouver, B.C. ....	Vancouver, B.C. ..	15 00
7260	" 29.	Frank Clarence Polley ..	Mate.....	" .....	" .....	6 00
7261	" 29.	George C. Ludlow .....	" .....	Leamington, Ont. ....	Toronto, Ont.....	6 00
7262	" 29.	Cecil Morrison .....	" .....	Midland, Ont. ....	" .....	6 00
7263	" 29.	John Frederick Rock ...	" .....	Warton, Ont. ....	" .....	6 00
7264	" 29.	Harry J. Carter .....	" .....	Fort William, Ont. ...	" .....	6 00
7265	" 29.	John Daniel Vosper.....	Master. ....	Vancouver, B.C. ....	Vancouver, B.C. ...	15 00
7266	" 29.	John Daniel Vosper.....	Mate. ....	" .....	" .....	6 00
7267	" 29.	Charles E. Rush.....	" .....	Little Current, Ont. ...	Toronto, Ont. ...	6 00
7268	" 29.	William Honsberger.....	Master. ....	Toronto, Ont. ....	" .....	15 00
7269	" 29.	Daniel F. Cornett.....	" .....	Owen Sound, Ont. ....	" .....	15 00
7270	Jan. 5.	Tupper Davidson.....	Mate.....	Collingwood, Ont. ....	Collingwood, Ont..	6 00
7271	" 5.	Thomas Murphy .....	" .....	Elgin, Ont. ....	Montreal, P.Q. ....	6 00
7272	" 5.	Nelson Stuart Thomas...	" .....	Esquimalt, B.C. ....	Victoria, B.C. ....	6 00
7273	" 5.	Whitney Kennie.....	Master.....	South Vancouver, B.C.	Vancouver, B.C. ...	15 00
7274	" 5.	Joseph Henry Glass. ....	" .....	Sarnia, Ont. ....	Toronto, Ont. ....	15 00
7275	" 5.	Clifford G. Schlochow...	Mate.....	West Toronto, Ont. ...	" .....	6 00
7276	" 5.	Norman J. Gildner.....	" .....	Warton, Ont. ....	" .....	6 00
7277	" 5.	Wilbert Beatty. ....	Master. ....	Midland, Ont. ....	" .....	15 00
7278	" 8.	Albert Ernest Laking...	" .....	" .....	Collingwood, Ont.	15 00
7279	" 8.	William Sitland .....	" .....	Halifax, N.S. ....	Halifax, N.S. ....	15 00
7280	" 8.	John Allan Ewart .....	" .....	Toronto, Ont. ....	Toronto, Ont. ....	15 00
7281	" 12.	Joseph Napier.....	" .....	Collingwood, Ont. ....	Collingwood, Ont..	15 00
7282	" 12.	David Knight Dick .....	" .....	Fergus, Ont. ....	Toronto, Ont. ....	15 00
7283	" 12.	John Blackley.....	" .....	Golden, B.C. ....	" .....	15 00
7284	" 12.	Robert Bruce Angus.....	Mate.....	Toronto, Ont. ....	" .....	6 00
7285	" 12.	John Parker .....	Master.....	Warton, Ont. ....	" .....	15 00
7286	" 12.	Charles Britton .....	" .....	Meaford, Ont. ....	" .....	15 00
7287	" 14.	Edgar Thibaudeau .....	Master.....	Portneuf, Que. ....	Quebec, Que. ....	15 00
7288	" 14.	Frederick F. Foote.....	" .....	Fergus, Ont. ....	Toronto, Ont. ...	15 00
7289	" 14.	Frank A. Garrett. ....	" .....	Collingwood, Ont. ....	Collingwood, Ont.	15 00
7290	" 14.	Charlie Wilson.....	Mate.....	" .....	" .....	6 00
7291	" 14.	Ernest W. Baker .....	Master.....	Batteau, Ont. ....	" .....	15 00
7292	" 14.	Wm. Moffatt Davidson ..	Mate.....	Victoria, B.C. ....	Victoria, B.C. ....	6 00
7293	" 14.	Hugh Duff .....	" .....	Vancouver, B.C. ....	Vancouver, B.C. ..	6 00
7294	" 14.	Jairus Alexander Maus ..	" .....	" .....	" .....	6 00
7295	" 14.	Cyril Bourgeois.....	" .....	Cheticamp, N.S. ....	Yarmouth, N.S. ...	6 00
7296	" 14.	Melville A. Hornsby....	" .....	Toronto, Ont. ....	Toronto, Ont. ....	6 00
7297	" 14.	William Dalton .....	Master.....	Port Dalhousie, Ont. ..	" .....	15 00
7298	" 21.	James Henry Campbell..	" .....	Gravenhurst, Ont. ...	Collingwood, Ont.	15 00
7299	" 21.	Gilbert Craig Ostrom ...	" .....	East Owen Sound, Ont	" .....	15 00
7300	" 21.	Eldon Walkinshaw .....	" .....	Collingwood, Ont. ....	" .....	15 00
7301	" 21.	Gustaf Hultgren.....	Mate.....	Windsor, Ont. ....	Toronto, Ont. ....	6 00
7302	" 21.	Thomas George Honess..	Master.....	Victoria, B.C. ....	Victoria, B.C. ....	15 00
7303	" 21.	Harry Leaney.....	" .....	Owen Sound, Ont. ....	Toronto, Ont. ....	15 00
7304	" 21.	William James Ferguson	Mate.....	Warton, Ont. ....	" .....	6 00
7305	" 21.	Thomas E. Jones.....	Master.....	Sault Ste. Marie, Ont.	" .....	15 00
7306	" 21.	David Arthur Williams..	" .....	" .....	" .....	15 00
7307	" 21.	David Langford .....	" .....	Fox Point, Ont. ....	" .....	15 00
7308	" 27.	Joseph Bishop.....	" .....	East Owen Sound, Ont	" .....	15 00
7309	" 27.	Norman M. Spencer ....	Mate. ....	Oxenden, Ont. ....	" .....	6 00
7310	" 27.	Alex. B. Wilson .....	" .....	Sarnia, Ont. ....	" .....	6 00
7311	" 27.	Norman Walton.....	" .....	Toronto, Ont. ....	" .....	6 00
7312	" 27.	William Thomas Morgan	" .....	Salmon Cover, N'f'd...	Halifax, N.S. ....	6 00
7313	" 27.	Arthur Wood.....	Master.....	Liverpool, Eng. ....	St. John, N.B. ....	15 00
7314	" 27.	Henry John Dunning ...	" .....	Southampton, Eng. ....	" .....	15 00
7315	" 27.	Leonard James Williams	" .....	New Barking Essex, Eng. ....	" .....	15 00
7316	" 27.	James Dexter.....	" .....	London, Eng. ....	" .....	15 00
7317	Feb. 6.	Jarrett L. Williams.....	Mate. ....	Vancouver, B.C. ....	Victoria, B.C. ....	6 00
7318	" 6.	James Cuthbert.....	Master.....	Cobourg, Ont. ....	Toronto, Ont. ....	15 00
7319	" 6.	Richard Boyd Gerow....	Mate. ....	Midland, Ont. ....	Collingwood, Ont.	6 00
7320	" 6.	James M. Preston.....	Mate.....	Warton, Ont. ....	Toronto, Ont. ....	6 00
7321	" 6.	Robert Leitch.....	" .....	Courtright, Ont. ....	" .....	6 00
7322	" 6.	William Monat.....	Master.....	Vancouver, B.C. ....	Vancouver, B.C.	15 00
7323	" 6.	William Brown McCartney	Master.....	" .....	" .....	5



5 GEORGE V., A. 1915

LIST of Certificates of Competency issued to Masters and Mates of Coasting and Inland Vessels during the twelve months ended March 31, 1914—*Continued.*

No. of Certificate.	Date of Certificate	Name.	Grade.	Address.	Where Examination was Passed.	Fee.
	1914.					\$ cts.
7324	Feb. 6..	R. McDonald Barkhouse	Mate.....	Westport, N.S.....	Yarmouth, N.S....	6 00
7325	" 6..	Erle C. Gibson.....	" .....	Margaretsville, N.S. .	" .....	6 00
7326	" 6..	Vivian Gray.....	Master.....	Galiano Island, B.C..	Victoria, B.C.....	15 00
7327	" 6..	Thomas Cliffe.....	" .....	Victoria, B.C.....	" .....	15 00
7328	" 6..	Joseph Connor.....	" .....	" .....	" .....	15 00
7329	" 6..	James Walker.....	" .....	" .....	" .....	15 00
7330	" 11..	Edward Walker Murphy	" .....	Midland, Ont.....	Collingwood, Ont..	15 00
7331	" 11..	Harvey L. Weber.....	" .....	Collingwood, Ont. ....	" .....	15 00
7332	" 11..	Harvey L. Weber.....	Mate.....	" .....	" .....	6 00
7333	" 11..	Jacob M. Collins .....	" .....	Vancouver, B.C. ....	Victoria, B.C.....	6 00
7334	" 11..	Joseph Theobald Marchand .....	" .....	Champlain, Que.....	Montreal, Que....	6 00
7335	" 11..	Dassise Rochon.....	Master.....	Cascades Point, Que .	" .....	15 00
7336	" 11..	Donald McGillivray.....	" .....	Kingston, Ont .....	" .....	15 00
7337	" 11..	Summersgill Snoddy.....	" .....	Vancouver, B.C. ....	Vancouver, B.C....	15 00
7338	" 11..	Peter McKay.....	Mate.....	Point Edward, Ont. .	Toronto, Ont. ....	6 00
7339	" 11..	Peter McDonald.....	Master.....	Goderich, Ont.....	" .....	15 00
7340	" 11..	Peter McDonald.....	Mate.....	" .....	" .....	6 00
7341	" 11..	Josep H. Bechard.....	" .....	Owen Sound, Ont.....	" .....	6 00
7342	" 11..	Charles B. Kirk. ....	" .....	Lakeport, Ont.....	" .....	6 00
7343	" 11..	George C. Wilson.....	" .....	Port Dalhousie, Ont..	" .....	6 00
7344	" 11..	Cyril William McKim... .	" .....	Hamilton, Ont.....	Collingwood, Ont	6 00
7345	" 11..	Peter Christianson.....	Master.....	Edmonton, Alta . .	Edmonton, Alta..	15 00
7346	" 16..	Herbert J. Brian.....	" .....	Kingston, Ont.....	Toronto, Ont.....	15 00
7347	" 16..	Calice P. Bourgeois.....	" .....	Halifax, N.S.....	Halifax, N.S.....	15 00
7348	" 16..	Charles A. Webster.....	" .....	Lions Head, Ont.....	Toronto, Ont.....	15 00
7349	" 16..	Frank B. MacLean .....	Mate.....	Halifax, N.S.....	Halifax, N.S.....	6 00
7350	" 16..	Alfred Raymond .....	" .....	Pointe au Père, Que..	Quebec, Que.....	6 00
7351	" 16..	Joseph Leblanc.....	" .....	Kamouraska, Que. ....	" .....	6 00
7352	" 16..	Emile Frenette.....	Master.....	Portneuf, Que.....	" .....	15 00
7353	" 16..	John T. Armstron .....	Mate.....	Sault Ste. Marie, Ont..	Collingwood, Ont..	6 00
7354	" 16..	Norman Fanning.....	Mate.....	Collingwood, Ont.....	Collingwood, Ont..	6 00
7355	" 16..	Duncan Campbell.....	Master.....	Vancouver, B.C.....	Vancouver, B.C....	15 00
7356	" 16..	Duncan Campbell.....	Mate.....	" .....	" .....	6 00
7357	" 16..	Isidore Thibodeau.....	Master.....	Portneuf, Que.....	Quebec, Que.....	15 00
7358	" 27..	William M. Wallace.....	Master..	Owen Sound, Ont.....	Collingwood, Ont..	15 00
7359	" 27..	Louis Moreau.....	Mate.....	Penetanguishene, Ont.	" .....	6 00
7360	" 27..	Joseph Armstrong.....	" .....	Sault Ste. Marie, Ont..	" .....	6 00
7361	" 27..	Robert James Morgan... .	" .....	Salmon Cove, Nfld....	Halifax, N.S.....	6 00
7362	" 27..	George Irving.....	Master.....	Dartmouth, N.S.....	" .....	15 00
7363	" 27..	Vernon Hirtle.....	Mate.....	Halifax, N.S.....	" .....	6 00
7364	" 27..	Thurlaw W. Bagnell... .	" .....	" .....	" .....	6 00
7365	" 27..	Martin Joseph Scanlon..	Master.....	Vancouver, B.C.....	Vancouver, B.C..	15 00
7366	" 27..	Martin Joseph Scanlon..	Mate.....	" .....	" .....	6 00
7367	" 27..	John Dempsey.....	" .....	" .....	" .....	6 00
7368	" 27..	Fritjof Edwin Forsbom..	Master.....	" .....	" .....	15 00
7369	" 27..	Fritjof Edwin Forsbom..	Mate.....	" .....	" .....	6 00
7370	" 27..	Alfred George Tinline... .	Master.....	Dunbarton, Ont.....	Toronto, Ont.....	15 00
7371	" 27..	Alfred George Tinline... .	Mate.....	" .....	" .....	6 00
7372	" 27..	James Godman.....	" .....	Kingston, Ont.....	" .....	6 00
7373	" 27..	Frank Bannerman.....	Master.....	Victoria, B.C. ....	Victoria, B.C.....	15 00
7374	Mar. 7..	Edward Corcoran.....	Mate.....	St. Catharines, Ont..	Collingwood, Ont..	6 00
7375	" 7..	Albro E. DeMill.....	" .....	Kingston, Ont.....	" .....	15 00
7376	" 7..	Mark Edward Needham..	Mate.....	Corunna, Ont. ....	" .....	6 00
7377	" 7..	Robert Henry Pickering..	Master.....	Collingwood, Ont.....	" .....	15 00
7378	" 7..	John Henry Ferguson... .	Mate.....	Warton, Ont.....	" .....	6 00
7379	" 7..	Morton Charles Griffin..	" .....	" .....	" .....	6 00
7380	" 7..	Charles Fullerton.....	" .....	Bent River, Ont.....	Toronto, Ont.....	6 00
7381	" 7..	Leslie E. Webb .....	" .....	Goderich, Ont .....	" .....	6 00
7382	" 7..	Henry Joseph McSherry..	Master.....	Toronto, Ont. ....	" .....	15 00
7383	" 7..	John A. McDonald.....	Mate.....	Gore Bay, Ont.....	" .....	6 00
7384	" 7..	William Spooner.....	Master.....	Halifax, N.S.....	Halifax, N.S.....	15 00
7385	" 7..	Byron Getson .....	" .....	Lahave, N.S.....	" .....	15 00
7386	" 7..	Clarence A. O'Hara.....	" .....	Isaac Harbour, N.S....	" .....	15 00
7387	" 7..	James More.....	Master.....	South Vancouver, B.C	Vancouver, B.C..	15 00
7388	" 7..	" .....	" .....	Vancouver, B.C.....	" .....	15 00



## SESSIONAL PAPER No. 21

LIST of Certificates of Competency issued to Masters and Mates of Coasting and Inland Vessels during the twelve months ended March 31, 1914—*Concluded.*

No. of Certificate.	Date of Certificate.	Name.	Grade.	Address.	Where Examination was Passed.	Fee.
						\$ cts.
7389	Mar. 7.	Rasmus Ulsten.....	Mate.....	Vancouver, B.C. ....	Vancouver, B.C. ..	6 00
7390	" 7..	Thomas Fowlow.....	" .....	Victoria, B.C. ....	Victoria, B.C. ....	6 00
7391	" 7..	Davis A. Brennen.....	Master.....	Centreville, N.S. ....	Yarmouth, N.S. ...	15 00
7392	" 7..	John A. Mathews.....	Mate.....	Collingwood, Ont. ....	Collingwood, Ont. ..	6 00
7393	" 7..	Isaac W. Horton.....	" .....	Guysboro, N.S. ....	Yarmouth, N.S. ...	6 00
7394	" 7..	Lawless F. Brannen....	Master.....	Clarks Harbour, N.S..	" .....	15 00
7395	" 7..	William J. Baker.....	" .....	Halifax, N.S. ....	Halifax, N.S. ....	15 00
7396	" 23.	Alexander Wilson.....	" .....	Collingwood, Ont. ....	Collingwood, Ont. ..	15 00
7397	" 23.	Josue Cassavi.....	" .....	Port Arthur, Ont. ....	" .....	15 00
7398	" 23.	Josue Cassavi.....	Mate.....	" .....	" .....	6 06
7399	" 23.	De Los Wilbur Whiteley	" .....	Sombra, Ont. ....	" .....	6 00
7400	" 23.	Charles Albert Whiteside	" .....	Owen Sound, Ont. ....	" .....	6 00
7401	" 23.	Daniel McLeod.....	" .....	Collingwood, Ont. ....	" .....	6 00
7402	" 23.	Hugh Ross Le Roy.....	" .....	Nottawa, Ont. ....	" .....	6 00
7403	" 23.	Alphonse Blouin.....	" .....	St. Jean, Isle d'Orleans.	Quebec, P.Q. ....	6 00
7404	" 23.	Adrien Dubé.....	" .....	St. Jean Port Joli, Que	" .....	6 00
7405	" 23.	Eugène Laroche .....	Master.....	Deschaillons, P.Q. ....	" .....	15 00
7406	" 23.	Joseph Arthur Lemay...	" .....	Portneuf, P.Q. ....	" .....	15 00
7407	" 23.	Maurice Vézina.....	" .....	St. Michel, P.Q. ....	" .....	15 00
7408	" 23.	Emile Ouellet.....	" .....	Isle Verte, P.Q. ....	" .....	15 00
7409	" 23.	Elie Imbeault .....	" .....	Malbaie, P.Q. ....	" .....	15 00
7410	" 23.	Albert Labadie.....	Mate.....	Bienville, P.Q. ....	" .....	6 00
7411	" 23.	John J. Flood.....	Master.....	Victoria, B.C. ....	Victoria, B.C. ....	15 00
7412	" 23.	Percy Drew.....	" .....	Apple river, N.S. ....	Yarmouth, N.S. ...	15 00
7413	" 23.	Ralph E. Welch.....	Mate.....	Westport, N.S. ....	" .....	6 00
7414	" 23.	Thomas Victor Darling..	Master.....	Callander, Ont. ....	Toronto, Ont. ....	15 00
7415	" 23.	John F. O'Hara.....	Mate.....	Isaac Harbour, N.S. ...	Halifax, N.S. ....	6 00
7416	" 23.	Charles R. Churchill....	Master.....	Halifax, N.S. ....	" .....	15 00
7417	" 23.	William D. Pearl.....	" .....	Martins Brook, N.S. ...	" .....	15 00
7418	" 23.	William D. Pearl. ....	Mate.....	" .....	" .....	6 00
7419	" 23.	Ashley Myers.....	" .....	Isaac Harbour, N.S. ...	" .....	6 00
7420	" 23.	Albert Thomas Janes....	Mate.....	Vancouver, B.C. ....	Vancouver, B.C. ..	6 00
7421	" 23.	John Taylor.....	Master.....	" .....	" .....	15 00
7422	" 23.	John Taylor.....	Mate.....	" .....	" .....	6 00
7423	" 23.	Elzear Othot.....	Master.....	Quebec, Que. ....	Quebec, Que. ....	15 00
7424	" 23.	Octave Jules Morin.....	" .....	St. Marcel, P.Q. ....	" .....	15 00
7425	" 23.	Angus Graham.....	Mate.....	Goderich, Ont. ....	Toronto, Ont. ....	6 00
7426	" 23.	James Devitt.....	" .....	Owen Sound, Ont. ....	Collingwood, Ont. ..	6 00
7427	" 23.	Cyprien Marchand .....	Master.....	Sorel, P.Q. ....	Montreal, P.Q. ....	15 00
7428	" 23.	Joseph Pierre Dufour...	Mate.....	Baie St. Paul, P.Q. ....	" .....	6 00
7429	" 23.	Walter Jacob Mills.....	" .....	Avonmore, Ont. ....	" .....	6 00
7430	" 23.	Clarence E. Mosher.....	Master.....	Dartmouth, N.S. ....	Halifax, N.S. ...	15 00
7431	" 23.	Clarence E. Mosher.....	Mate.....	" .....	" .....	6 00
7432	" 23.	James William Jennex..	Master.....	Jeddore, N.S. ....	" .....	15 00
7433	" 23.	Louis Dicks.....	Mate.....	Halifax, N.S. ....	" .....	6 00
7434	" 23.	Gordon Evans.....	Master.....	Victoria, B.C. ....	Victoria, B.C. ....	15 00
7435	" 23.	Llewelyn Sheppard. ....	" .....	" .....	" .....	15 00
7436	" 23.	Stephen M. Rolfe. ....	" .....	Alma, N.B. ....	St. John, N.B. ....	15 00
7437	" 23.	James Albert Bowes.....	" .....	Dartmouth, N.S. ....	Halifax, N.S. ...	15 00
7438	" 28.	Richard Joseph Hickey..	" .....	Victoria, B.C. ....	Victoria, B.C. ....	15 00
7439	" 28.	Edmond Groulx.....	" .....	Beauharnois, P.Q. ....	Quebec, P.Q. ....	15 00
7440	" 28.	Isaiah McDonald.....	" .....	Gabarous, C.B. ....	North Sydney, N.S.	15 00
7441	" 28.	Clarence Theodore Johnson.	Mate.....	Vancouver, B.C. ....	Vancouver, B.C. ...	6 00
7442	" 28.	John Wm. Dollar. ....	Master.....	Hampstead, N.B. ....	St. John, N.B. ....	15 00
7443	" 28.	Edward Rowland Smith..	" .....	Fort William.....	Port Arthur, Ont. ..	15 00
7444	" 28.	James Garriock.....	" .....	Port Arthur, Ont. ....	" .....	15 00
7445	" 28.	Alexander Fraser.....	Mate.....	Pt. Edward Village, O.	Toronto, Ont. ....	6 00
7446	" 28.	William Edmond Cornett	Master.....	Owen Sound, Ont. ....	Collingwood, Ont. ..	15 00
7447	" 28.	Owen M. Williams .....	Mate.....	Ostrea Lake, N.S. ....	Halifax, N.S. ....	6 00
7448	" 28.	Arthur Moore .....	" .....	Bear River, N.S. ....	Yarmouth, N.S. ...	6 00
7449	" 28.	St. Clair Cann.....	" .....	Westport, N.S. ....	" .....	6 00
7450	" 28.	George U. Schmeisser...	" .....	Lahave, N.S. ....	Halifax, N.S. ....	6 00
7451	" 28.	Clayton M. Westhaver..	" .....	Martins Brook, N.S. ...	" .....	6 00



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List of Certificates of Service issued to Masters and Mates of Coasting and Inland Vessels during the twelve months ended March 31, 1914.

No. of Certificate.	Date of Certificate	Name.	Grade.	Address.	Where Examination was Passed.	Fee.
	1913.					\$ cts.
3415	Oct. 14..	André Evariste St. Pierre	Mate.....	Rimouski, Que.....	Quebec, Que.....	4 00
	1914.					
3416	Feb. 26..	Pierre Pineault.....	Master.....	Rimouski, Que.. ....	Quebec, Que.....	8 00

List of Masters' Temporary Certificates issued during the twelve months ended March 31, 1914.

No. of Certificate.	Date of Certificate.	Name.	Grade.	Address.	Where Examination was Passed.	Fee.
	1913.					\$ cts.
45	April 15..	Joseph Deslauriers .. .	Master.....	Quebec, Que.....	Quebec, Que.....	5 00
46	" 15..	Theodore Seaman.....	" .....	Sauble Falls, Ont. ....	Collingwood, Ont..	5 00
47	" 15..	William K. Sims.....	" .....	Sault Ste. Marie, Ont.	" ..	5 00
48	" 24..	George Finan. ....	" .....	Braeside, Ont.....	Montreal, P.Q....	5 00
49	May 9..	George Lindsay .....	" .....	Kenora, Ont.....	Kenora, Ont.....	5 00
50	" 9..	Charles Wesley Brooker.	" .....	" .....	" .....	5 00
51	" 9..	Charles McLeod .....	" .....	Cumberland, Ont. ...	Montreal, P.Q....	5 00
52	" 9..	James Jackson .....	" .....	Indian, White Horse, Y.T.	.....	5 00
53	" 14..	Albert F. Stanton.....	" .....	Port Stanton, Ont....	Collingwood, Ont.	5 00
54	" 22..	William Cooke.....	" .....	Grenville, P.Q. ....	Ottawa, Ont.....	5 00
55	" 27..	William Powles .....	" .....	Picton, Ont. ....	Picton, Ont....	5 00
56	June 2..	Robert H. Johnston.....	" .....	Port Carling, Ont. ...	Collingwood, Ont.	5 00
57	" 10..	Telesphore Martin .....	" .....	Pointe Fortune, P.Q..	Montreal, P.Q....	5 00
58	July 2..	Albert Allen Jesmer .. .	" .....	Cornwall, Ont.....	" .....	5 00
59	" 11..	Stanley Horace Buck- land	" .....	Neilsonville, P.Q.....	Quebec, Que ....	5 00
60	" 28..	John Cameron.....	" .....	Kingston, Ont. ....	Montreal, P.Q ...	5 00
61	Aug. 11..	William Edwin Owen...	" .....	Richard's Landing, Ont.	Collingwood, Ont.	5 00
62	" 13..	Henri Carrière .....	" .....	Montebello, P.Q. ....	Montreal, P.Q....	5 00
63	Sept. 29.	Joseph Roy .....	" .....	Carillon, P.Q. ....	" .....	5 00
64	" 29..	Oscar Wanamaker .....	" .....	Lakefield, Ont. ....	.....	5 00
65	" 29..	James Pendergast. ....	" .....	Cornwall, Ont.....	Montreal, P.Q....	5 00
66	Oct. 7..	Simon Cimon .....	" .....	Roberval, P.Q. ....	Quebec, Que.....	5 00
67	" 7	John T. Inman.....	" .....	Bonshaw, P.E.I. ....	Charlottetown, P.E.I.	5 00
68	" 17.	Ole Dahl .....	" .....	Banff, Alta. ....	Kenora, Ont.....	5 00
69	" 17..	John Standly.....	" .....	" .....	" .....	5 00
70	" 18..	James I. Campbell.....	" .....	Kelowna, B.C.....	Nelson, B.C.....	5 00
	1914.					
71	Jan. 8..	Charles Edwin Miller ...	Master.....	Dawson, Y.T.....	Dawson, Y.T. ....	5 00
72	" 21..	William McSeivewright.	" .....	Vancouver, B.C.....	Vancouver, B.C...	5 00
73	Mar. 18..	Alfred Girard .....	" .....	St. Fulgence, P.Q....	Montreal, P.Q....	5 00



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## APPENDIX No. 10.

## LIFE SAVING REPORT FOR 1913-14.

To the Deputy Minister of Marine and Fisheries,  
Ottawa, Ont.

SIR,—I have the honour to submit the following report of life saving service for the season 1913-14.

## NOVA SCOTIA.

*Baker Cove.*—There is a volunteer crew at this station. On the 19th May, 1913, crew went to the assistance of the steamer *Gerald Turnbull* which ran ashore on Gannet Rock ledge, and stood by the vessel, but as the crew declined to abandon the ship the life-boat returned to her station.

On May 30, Norwegian ship *Freia* parted her cables and went ashore on Sunday point. Life-boat crew went around by shore with lines to render assistance to crew. All saved.

*Bay View.*—There is a permanent crew at this station. During the year this boat was called out several times to assist fishing boats in distress, and to search for boats that had been blown out to sea.

On the 9th September, 1913, the schooner *Agnes G. Donahue* went ashore at point Prim and became a total loss. Crew saved by life-boat.

*Blanche.*—There is a volunteer crew at this station.

On 20th November, 1913, an American fishing schooner ran ashore at the salvages at 3 a.m.; blowing hard. Life-boat went to assistance but found crew had abandoned vessel.

*Canso.*—Volunteer crew at this station.

June 8, 1913, called out to wreck of schooner *Shamrock*. July 25, 1913, called out to schooner *Arethusa* in distress.

*Cheticamp.*—There is a permanent crew at this station during the season of navigation.

May 13, 1913, went to assistance of fishing boat in distress. Blowing hard.

August 4, 1913, went to assistance of disabled gasoline boat. Strong wind off shore.

During the month of November, 1913, crew was out four times to assist fishing vessels in distress.

*Duncan Cove.*—There is a volunteer crew at this station, and during the season of 1913 they rendered assistance to a schooner that was in distress and in danger of becoming a wreck.

*Herring Cove.*—Volunteer crew at this station. January 24, 1914, this crew was called out to the wreck of the American schooner *Selina* which went ashore at Mangers beach.

*Seal Island.*—There is a subsidized volunteer crew at this station. June 9, 1913, called out to wreck of schooner *Maia*, took off crew of twenty men.

*Westport.*—There is a volunteer crew at this station which uses a subsidized fishing boat. They were called out three times during the season to render assistance to disabled fishing boats. At the wreck of the steamer *Cobequid* the crew patrolled Brier island and, in addition, went in the tug *John L. Cann* and assisted in the salvage of the passengers and crew of the wrecked steamer.



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## PRINCE EDWARD ISLAND.

*Cascumpeque*.—There is a volunteer crew at this station.

May 11, 1913, called out to the assistance of schooner *Loring J. Haskell*.

*Charlottetown*.—Volunteer crew at this station.

June 12, 1913, called out to the wreck of the schooner *Polar Star*.

October 5, went to the assistance of schooner *Ada Mildred*.

November 1, life-boat was towed out by *Brant* in heavy gale to the assistance of schooner *Flora T*. The boat capsized and was damaged, the *Brant* being forced to return to Charlottetown.

## NEW BRUNSWICK.

*Little Wood Island*.—There is a permanent crew at this station, and during the winter months a large motor sloop is employed. During the season they were called to the assistance of thirty-five disabled fishing boats and schooners, several of which were in great danger and without the assistance of the life-boat crew would probably have been wrecked, with loss of life.

## ONTARIO.

*Consecon*.—There is a volunteer crew at this station.

July 7, 1913, boat responded to a call for assistance from the steamer *Ames*. On arrival at the wreck, a distance of 20 miles from the station, they found the crew had managed to land in one of their own boats.

*Goderich*.—There is a volunteer crew at this station.

August 8, 1913, the life-boat was called to the assistance of a small boat with two men in it which had capsized out in the lake. One man was rescued and the other was unfortunately drowned. A heavy gale was blowing at the time. After the heavy gale which swept the Great Lakes from the 8th to 11th November, 1913, the crew of this station patrolled the beach looking for bodies of the dead, and rendered every assistance possible. The sympathy of the department is extended to Coxswain McDonald, whose son was one of the victims of the storm.

*Long Point*.—There is a permanent crew at this station during the season of navigation on the great lakes.

July 7, 1913, crew went to the assistance of the barge *Mary McLaughlin*. The vessel became a total wreck. Crew of five were rescued.

October 21, after a long hard pull the life-boat reached the wreck of the steamer *C. W. Elphicke* which was ashore off the point, and rescued the crew of 18.

*Point Pelee*.—There is a permanent crew at this station during the season of navigation. No casualties were reported from this station until the fall of 1913, when the life-boat was called out four times to vessels in distress.

*Toronto*.—Permanent crew during the season of navigation. The work of the crew at this station during the past season has been, on the whole, very satisfactory. It would be too much to enumerate here the number of times they have been called out to render assistance to persons and boats in distress. Canoes, skiffs, power-boats and sailing yachts on the bay and in the harbour were assisted from time to time as occasion demanded.

On the 20th October, 1913, the crew of the barge *Sligo* was taken off the vessel by the life-saving crew in the surf boat in a heavy gale of wind.

## BRITISH COLUMBIA.

*Banfield*.—Permanent crew at this station all the year round.

April 10, 1913, called out to assistance of *Inlet Queen*. Vessel was lost, but crew saved.

May 3, called out to assistance of C.P.R. steamer *Tees*, ashore in Barclay sound. Vessel was eventually released.



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December 6, called out to the assistance of gasoline boat ashore in Barclay sound. Life-boat crew got the boat off and towed her to Banfield creek.

*Clayoquot*.—Permanent crew during winter months.

November 26, 1913, went to the rescue of a man whose boat was in danger.

January 15, 1914, rescued two men when boat capsized in a gale of wind. Also rescued another man who was being blown out to sea.

*Ucluelet*.—Permanent crew.

Boat called out twice in November to assist vessels in distress. New motor life-boat now in commission at this station.

HENRY THOMPSON, R.N.

*General Supt. of the Life-saving Service.*

REWARDS, SAVINGS LIFE, 1913-14.

	\$	cts.	\$	cts.
General account.....			3,767	19
<i>Nova Scotia :</i>				
Bakers Cove.....	431	80		
Bay View.....	18,129	24		
Blanche.....	343	76		
Brier Island.....	288	36		
Canso.....	363	00		
Cheticamp.....	4,628	34		
Clark Harbour.....	375	96		
Devil Island.....	4,512	52		
Duncan Cove.....	1,090	35		
Herring Cove.....	578	47		
Pictou.....	377	08		
Port Mouton.....	282	63		
Sable Island.....	6,694	83		
Scattarie ..	375	74		
Seal Island.....	1,096	63		
St. Paul Island.....	4,503	72		
Whitehead.....	404	34		
<i>Prince Edward Island :</i>			44,476	77
Alberton.....	378	03		
Cascumpeque.....	318	22		
Charlottetown.....	712	07		
Priest Pond.....	470	29		
Souris.....	698	97		
<i>New Brunswick :</i>			2,577	58
Cape Tormentine.....	289	00		
Escuminac.....	305	70		
Little Wood Island.....	7,366	40		
Richibucto.....	3,485	36		
<i>Quebec :</i>			11,446	46
Entry Island.....	266	51		
<i>Ontario :</i>			266	51
Cobourg.....	271	00		
Collingwood.....	280	80		
Goderich.....	420	65		
Kincardine.....	346	00		
Consecon.....	313	33		
Long Point.....	6,861	90		
Pelee.....	4,862	65		
Port Hope.....	412	50		
Port Stanley.....	719	45		
Southampton.....	393	30		
Toronto Island.....	18,139	09		
<i>British Columbia :</i>			33,020	67
Banfield ...	12,525	83		
Clayoquot.....	5,362	48		
Cluoose.....	90	00		
Tassiat.....	69	40		
Ucluelet.....	24,531	58		
Victoria.....	36	00		
			42,615	29
			138,170	47



LIFE-SAVING STATIONS maintained

Number.	Stations.	Established.	Coxswain.	Crew.	Coxswain's salary. Per annum.	Pay of Crew.
					\$	
1	New Brunswick-- Little Wood Island .....	1910	Harry Harvey....	8	.....	Coxswain \$60 per month, crew \$35 per month, 75c. a day board.
2	Richibucto.....	1907	Albert Long ...	8	.....	Coxswain \$60 per month, crew \$35 per month, 50c. a day board during the season.
3	Point Escuminac.....	1908	E F. Flieger.....	7	75	\$2.00 per drill.....
4	Cape Tormentine.....	1912	I. Allen....	7	75	" .....
5	Nova Scotia-- Baker's Cove. ....	1886	R. L. Baker.....	7	75	" .....
6	Blanche ...	1889	Edgar H. Swaine..	7	75	" .....
7	Clark Harbour.....	1900	W. D. Attwood...	7	75	" .....
8	Canso .....	....	J. J. Berrigan....	7	75	" .....
9	Devil's Island.....	1885	B. H. Henneberry	7	75	" .....
10	Duncan Cove.....	1886	J. W. Holland....	7	75	" .....
11	Herring Cove.....	1885	Edw. V. Dempsey	7	75	" .....
12	Pictou Island.....	1889	Duncan McCallum	7	75	" .....
13	Port Mouton.....	1889	Walter Cooke.....	7	75	" .....
14	Scattarie .....	1885	Jas. Nearing ..	7	75	" .....
15	Seal Island. ....	1880	Smith G. Penney..	7	250	\$100 per annum.
16	St. Paul Island.....	1885	Supt. Humane Establishment.	3	.....	\$300 each per annum.
17	Whitehead.....	1890	John Phalen .....	7	75	\$2 per drill and extra when saving life.
18	Sable Island.....	1885	{ Douglas Henneberry. Jas. Ritcey.....	..... .....	250 250	} Paid as island staff.
19	Cheticamp.....	1911	M. Maillett. ....	7	.....	Coxswain \$60, eng. \$50, crew \$35 during season of navigation.
20	Bay View (Digby Co.)....	1911	J. W. Hayden....	7	.....	Coxswain \$60 per mon., eng. \$50, crew \$35 and \$15 a month board.
21	Prince Edward Island-- Priest Pond... ..	1909	Chas. Campbell...	12	75	\$2 per drill and extra when saving life.
22	Charlottetown .....	1907	E. White.....	6	75	\$2 per drill and extra when saving life.
23	Souris. ....	1907	Pius Cheverie....	7	75	\$2 per drill and extra when saving life.
24	Alberton .....	1907	Gordon Bennett..	12	75	\$2 per drill and extra when saving life.
25	Cascumpeque. ....	....	Joshua Hutt .....	8	75	\$2 per drill and extra when saving life.



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by the Dominion Government.

Description of Boat.	Cost.	Where Built.	Equipment.	Remarks.
	\$			
Beebe-McLellan twin screw, motor boat.	2,500	Sorel, P.Q.....	Full regulation..	Station built 1911 and telephone communications established between Grand Rock, Little Wood Island and Seal Cove.
Race point surf-boat, 24 feet long.	225	" .....	" ..	New dwelling house in commission during season of navigation.
Beebe-McLellan self-bailing.....	250	" .....	" ..	Boathouse to be built.
" " .....	250	" .....	" ..	
Dobbin's pattern self-righting, 28 feet long.	575	Dartmouth, N.S.	" ..	Iron rails laid in 1900.
Beebe-McLellan surf-boat, self-bailing, 25 feet long.	250	" ..	" ..	New boat, 1901.
Beebe-McLellan self-bailing, 25 feet long, low ends.	250	" ..	" ..	Boathouse completed June 7, 1909.
Dobbin's pattern, surf-boat, self-bailing, 25 feet long.	575	" ..	" ..	Lyle gun at this station.
Beebe-McLellan surf-boat, self-bailing, 25 feet long.	250	Shelburne, N.S..	" ..	Lyle gun at this station and new boat in 1903.
" " ..	250	" ..	" ..	
Dobbin's pattern, self-righting and bailing, 25 feet long.	575	Dartmouth, N.S.	" ..	Telephone communication established 1913.
" " ..	575	" ..	" ..	
Beebe-McLellan surf-boat, self-bailing, 25 feet long.	250	Shelburne, N.S..	" ..	New boat in 1903.
Beebe-McLellan boat on east side.	240	" ..	" ..	" "
Beebe-McLellan boat on west side	240	Halifax, N.S....	" ..	" "
Beebe-McLellan self-bailing, 25 feet long, low ends.	250	Shelburne, N.S..	" ..	Lyle gun here since 1903.
Dobbins's pattern, surf-boat, self-bailing, 25 feet long.	575	Dartmouth, N.S.	" ..	
Two Dobbin's pattern, self-righting and bailing, and one Beebe-McLellan self-bailing.	1,100	Halifax, N.S....	" ..	Lyle gun and rocket apparatus at this station. Coxswain under control of Supt. of Humane Establishment.
Beebe-McLellan twin screw, motor boat.	2,500	Sorel, Q.....	" ..	New station with lookout tower and telephone communication has been completed.
36 feet, self-bailing, self-righting power boat.	9,500	Baycnne, N.J ..	" ..	
Board of Trade rocket apparatus. ....		England .....	" ..	
Beebe-McLellan self-bailing.....	225	Shelburne, N.S..	" ..	
" " ....	225	" ..	" ..	
" " ....	.....	" ..	" ..	
Board of Trade rocket apparatus. ....		England. . ....	" ..	



LIFE SAVING STATIONS maintained by

Number.	Stations.	Established.	Coxswain.	Crew.	Coxswain's salary. Per annum.	Pay of Crew.
<i>British Columbia—</i>						
26	Banfield .....	1909 1907	Geo. Murray....	11	.....	Coxswain \$110 per month, eng. \$75, crew \$65 per month, 70c. for board.
27	Ucluelet .. .. .	1908	W. L. Thompson..	9	.....	Coxswain \$85 per month, \$65 per month for men during season and 65c. board.
28	Tassiat.... ..	1907	W. Kennedy.....	1	60	Patrol.....
29	Clayoquot.....	1908	A. Arnet.....	8	85	\$65 per month when employed, 70c per day board.
<i>Ontario—Great Lakes—</i>						
30	Cobourg .....	1882	D. Rooney. ....	6	75	\$2 per drill and extra when saving life.
31	Collingwood.. ..	1885	G. F. Watts.....	7	75	" " " ..
32	Goderich.....	1886	Malc. McDonald..	7	75	" " " ..
33	Kincardine.....	1903	Thos. McGaw ....	7	75	" " " ..
34	Long Point ....	1902	Jas. Smith.....	9	75	1st April to 15th Dec., cox. \$60 per month, crew \$45 per month, 75c. per day board.
35	Point Pelee. ....	1900	L. Wilkinson. ....	7	75	1st April to 15 Dec., cox. \$60 per month, crew \$50 per month, 75c per day board.
36	Port Hope.....	1889	John McMahon...	7	75	" " " ..
37	Port Stanley.. ..	1885	J. R. Moore.....	7	75	" " " ..
38	Toronto Island.....	1883	Frank Ward.. ....	11	75	Cap. \$100 per month, mate \$80, 2nd mate \$70 and crew \$65, and 75c. per day, board allowance, during season of navigation.
39	Consecon.. ..	1898	R. Bedford.....	7	75	\$2 per drill.....
40	Southampton.....	1907	Hector McLeod...	7	75	" .....

NOTE—There are several other places in Canada, not regularly organized, which receive support from N.S., Cape Tormentine, N.B., and Wellington on Lake Ontario. There is also a life-saving station at



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the Government.—*Concluded.*

Description of Boat.	Cost.	Where built.	Equipment.	Remarks.
	\$			
Self - righting, self - bailing 36 ft. power boat.	1,184 52	Bayonne City, U.S.A.	Full regulation..	New motor boat and Lyle gun in combination with Pachena Bay.
Doherty's Improved Beebe-McLellan, 25 feet long.	575	Vancouver Shipyard Co., Vancouver, B.C.	" ..	Placed at Pachena Bay.
Doherty's Improved Beebe-McLellan, 25 feet long.	10,500	M. Defoe, Vancouver.	Full regulation..	Boat completed 1913.
Dobbin's pattern, self - righting and bailing.	750	Goderich, Ont ..	" ..	
Beebe-McLellan self-bailing surf-boat.	375	Collingwood, O..	" ..	New boat in 1896.
Surf-boat.....	330	" ..	" ..	New boat in 1892.
Beebe-McLellan self-bailing, surf-boat.	350	" ..	" ..	New boat in 1903.
Surf-boat.....	500	" ..	" ..	Station moved to east end of Point. Telephone communication established 1913.
" ..	350	" ..	" ..	A tramway has been constructed at this station.
Dobbin's pattern, self - righting and bailing.	620	Goderich, Ont...	" ..	
Beebe-McLellan surf - boat, self-bailing, 25 feet long.	350	Collingwood, O..	" ..	
Dobbin's pattern, self - righting and bailing.	600	Goderich, Ont ..	" ..	2 motor boats one 25 miles an hour, the other one 24 miles an hour, have been placed here. The station was moved to Ward's Island and plans are being prepared for a sub station at Hanlan's Point.
" " "	750	" ..	" ..	Removed from Wellington in 1893.
Beebe-McLellan surf-boat, self-bailing.	330	Collingwood, O..	" ..	

the Dominion Government where there is a life-saving service of more or less importance, such as Halifax Victoria, B.C., maintained by the Victoria Life Saving Association.



SIGNAL STATION, CITADEL, HALIFAX, N.S.

RECORD OF SHIPPING, as per record folio, from April 1, 1913, to March 31, 1914.

R—Reported. A—Arrived. P—Passed.

Months.	Men of War, British.			Men of War, Foreign.			Steamers, 1st Class.			Steamers, 2nd Class.			Ships, Barges and Barquentines.			Brigs and Brigantines.			Schooners, 3 mast- er bearing private signals.			Monthly Totals.		
	R.	A.	P.	R.	A.	P.	R.	A.	P.	R.	A.	P.	R.	A.	P.	R.	A.	P.	R.	A.	P.	R.	A.	P.
1913-1914.																								
April .....				1	1		90	90		37	37		1	1					3	3		132	132	
May .....	3	3		3	3		55	55		49	49								7	7		117	117	
June .....				3	3		70	69	1	55	55		1	1					7	7		136	135	1
July.....				1	1		72	72		50	50		1	1					13	13		137	137	
August.....				1	1		65	65		61	61		1	1					8	8		136	136	
September ..	1	1		1	1		65	64	1	51	51		2	2					8	8		128	127	1
October .....							57	57		37	37		1	1					10	10		105	105	
November. .	1	1					52	52		47	47		2	2					3	3		105	105	
December ..							78	78		46	46								7	7		131	131	
January.....							65	64	1	30	30								3	3		98	97	1
February...				1	1		65	64	1	18	18								2	2		86	85	1
March.....				2	2		74	73	1	38	38		1	1					4	4		119	118	1
	5	5		13	13		808	803	5	519	519		10	10					75	75		1430	1425	5

Total vessels reported ..... 1,430  
" arrived... .. 1,425  
" passed ..... 5

L. G. VAN TUYL, CAPT. R.C.E.,  
Supt. of Signals.



APPENDIX No. 11.

SABLE ISLAND.

SIR.—I beg to submit the following report for the period from May 22, 1913, to February 28, 1914.

On May 22 of last year I landed with my family on the above named island, and assumed the duties of superintendent.

During the first week after our arrival, in company with R. J. Boutilier, ex-superintendent, of the island, I visited all the stations and began my duties in a regular way.

The season has been very uneventful, no known wrecks have occurred except the wreckage found strewn along the shores of the island during the first week of January, which is generally believed to be all that remains of the schooner *Iona W.* of Mahone Bay.

During the month of August some sixty or seventy deals landed on the island, most likely washed from some deck-loaded vessel. They were hauled up and used for building and repairs.

REPAIRS.

At main station we shingled part of roof of dwelling, greater part of horse-barn roof, put new water spouting around it, and sundry other repairs. Temporary repairs to cow barn.

New ladders reaching from ground to wind vane and anemometer some 35 feet, and built a small icehouse 16 feet by 12 feet, which is now full of ice.

WEST LIGHT.

Shingled and put in good repair an outhouse used as a dairy and storehouse, much needed; made storm windows and new water-spouting for dwelling. Also storm windows for No. 2 and 4 stations.

In July we built a new horse pound at No. 3 station.

Those, with a number of minor repairs, conclude the repair list.

PAINTED.

Dwelling at main station, lime-washed and trimmed all buildings around the dwelling.

All the other stations are badly in need of paint and repairs, and some of them very extensive.

Beach apparatus in fairly good condition.

POPULATION.

No. 1 station.. . . .	14
Supt Blakney and family (7) ; Carpenter, A. Gill; cook, W. Gill; boatman, W. Mott; boatman, F. Blank; boatman, C. Cleary, boatman, D. Kennedy; boatman, C. Driscoll.	
No. 2 station.. . . .	5
Keeper and cockswain, D. Hennebery and family.	
No. 3 station.. . . .	5
Keeper, S. Glazebrook and family (4) ; assistant, W. Cleary.	
No. 4 station.. . . .	7
Keeper, J. Ritcey and family (5) ; assistant, A. Whare; assistant, S. Deyoung.	



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No. 13 station.. . . .	5
Keeper, A. Northrup and family.	
West light.. . . .	7
Keeper, J. Edwards and family (6) ; assistant, J. Edwards, jr.	
East light.. . . .	8
Keeper, J. Gregiore and family (7) ; assistant, H. Naugle	
Marconi wireless station.. . . .	5
Chief operator, D. Ross ; assistant operator, H. Coade ; assistant operator, G. Cope ; assistant operator, R. Adendorff ; cook, R. Cleary.	
Total.. . . .	56

A type writing machine would be a very useful thing, as well as handy ; am doing this work with Mr. Ross's, the chief operator's machine.

BOATS ON HAND.

Main station : One life-boat, two surf-boats, two dories.  
No. 3 station : One life-boat, one surf boat.  
No. 4 station : Two life-boats, one surf boat, one dory.

All in fairly good condition except surf boat No. 4, for which there is a new one ordered.

Farming was executed as usual. Crops were about an average judging from past records, except potatoes, which were poor.

Stock killed : Four oxen, weighing 2,860 pounds ; thirteen hogs, weighing 2,070 pounds.  
Stock on hand : Sixty horned cattle, forty trained horses, two colts, six hogs.

Patrolled in thick weather eighteen times.

Shipped : Thirty-three horses, thirty-five barrels cranberries, an old lantern from West light, and a number of salt hides.

Number of boat drills : Nine.  
Number of drills with beach apparatus : Eight.

I would like to recommend that a motor dory be supplied for the island, for use in cases where we have long distances to go, such as to the detached bar, where we had to go during the winter, or even further, to the supposed new island which may be there yet, and also in cases of a heavy surf with wind on the shore, to pull life-boat or surf boat out in an emergency. For general work it would be a very useful boat, a good investment.

The telephones are in poor condition.

I am your obedient servant,

J. C. BLAKENY,

*Superintendent Sable Island.*



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## APPENDIX No. 12.

## BOARD OF STEAMBOAT INSPECTION, CHAIRMAN'S REPORT.

OTTAWA, October 7, 1914.

To the Deputy Minister of Marine and Fisheries,  
Ottawa.

SIR,—I have the honour to submit, as follows, the annual report of the Steamboat Inspection Service, for the fiscal year ending March 31, 1914.

## STAFF.

In view of the increased work at Halifax, and that an officer might be available for the inspection of ships' tackle, Mr. Dennis J. Murray was appointed inspector of boilers and machinery at Halifax, with instructions that his duties should cover the inspection of ships' tackle. Mr. Murray was appointed to this position on November 1, 1913.

In connection with the International Conference on Safety of Life at Sea, Mr. McDonnell, assistant chairman, left Ottawa for London on the 28th October, 1913, to act in the capacity of expert consultant to yourself the delegate from Canada. Mr. McDonnell returned to Ottawa on January 20, 1914.

During the year, consideration was given to the amendment of the life-saving appliances rules, and a draft set of rules was prepared and issued to shipowners and others interested, with a view to having their criticisms thereon.

Considerable work was also done by the staff in connection with the revision of Parts VII and IX of the Canada Shipping Act.

## BOARD MEETINGS.

During the year various board meetings have been held to discuss questions which have arisen, principally in connection with interpretation of the rules governing the inspection of boilers and machinery.

## CASUALTIES.

The following are the casualties reported from the several divisions during the year ending March 31, 1914.

*Nova Scotia Division.*—On November 1, 1913, the ss. *Bridgeport* left Sydney, N.S., for Montreal, with a cargo of coal, and never reported.

On January 13, 1914, the ss. *Cobequid* stranded on Trinity ledge, bay of Fundy, and became a total loss. No lives lost.

On March 17, 1914, the ss. *City of Sydney* struck off Shag rock, N.S., and became a total loss. No lives lost.

*New Brunswick Division.*—On December 7, 1913, the ss. *Imperator* was destroyed by fire, while at her dock at Bathurst, N.B.

*Quebec Division.*—On July 28, 1913, the ss. *Lady of Gaspe*, of Quebec, while on her trip from Montreal to Gaspe, collided with the steamer *Crown of Cordova* sustaining considerable damage to her hull. She was immediately beached to prevent sinking and hauled off the next day and towed to Quebec for repairs. No fatalities.



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*Sorel Division.*—On January 21, 1914, the ferry steamer *Glacial*, of Montreal, while lying at her wharf at Three Rivers, was crushed by the ice and sank in about 40 feet of water. No fatalities.

*Montreal Division.*—On June 7, 1913, the ss. *Agnes*, of Montreal, 29 tons gross tonnage, while lying at the wharf at Buckingham, Que., was totally destroyed by fire. Cause of fire unknown.

On March 24, 1914, the ss. *City of Montreal*, of Toronto, 1,554 tons gross tonnage, while lying in winter quarters in the canal at Montreal, caught fire and was partially burnt. The hull and machinery have since been repaired, and the steamer is now running as a freight boat. Cause of fire unknown.

*Kingston Division.*—On October 7, 1913, the ss. *John Duncan*, while proceeding down lake Ontario—coal laden—broke her outside stern bearing, allowing the tail shaft to drop, thereby shaking the stern tube loose and breaking the gland on the stern pipe, and had to be beached at South Bay point, on the morning of October 8. On examination in dry dock, found three blades broken off the propeller.

*Toronto Division.*—On June 29, 1913, the tug *W. H. Price*, of Collingwood, was totally destroyed by fire at Parry Sound.

On August 8, 1913, the passenger steamer *John Lee, Sr.*, of Wallaceburg, was partially destroyed by fire at Port McNicol.

On August 30, 1913, the tug *Gale* (formerly *Active*, of Amherstburg), was totally destroyed by fire at Pelee island.

During a storm which prevailed on lakes Huron and Superior, November 9 and 10, 1913, the ss. *James Carruthers*, of Toronto, foundered on lake Huron, the ss. *Regina* and *Wexford*, registered in Great Britain, also foundered on lake Huron in the same storm, the entire crews of the three steamers (numbering about 50 persons) were drowned.

At the same time the ss. *Acadian*, of Glasgow, G.B., was driven ashore near North point, Saginaw bay, and the *Turret Chief* went ashore on Keweenaw point, Lake Superior. The *Acadian* was released, and repaired at Detroit, Mich., the *Turret Chief* was abandoned by the owners to the underwriters, and is still in the same position.

*Collingwood Division.*—On May 2, 1913, the ss. *John Torrent*, of Sault Ste. Marie, was burnt at Richards Landing, St. Mary river. Cause of fire unknown. No casualties.

On August 21, 1913, the ss. *Clara Hickler*, of Sault Ste. Marie, foundered off Point Iroquois, Whitefish bay, and is not yet regarded as a total loss. No casualties.

On September 5, 1913, the ss. *Victoria K*, of Goderich, was in collision with the steamer *Germanic* of Collingwood, off the harbour of Blind River, which resulted in the drowning of one man and the sinking of the ss. *Victoria K*, which steamer has since been raised and repaired.

On October 7, 1913, the ss. *Aggie B. Reid*, of Sault Ste. Marie, was burnt, and sank between Thessalon and Cockburn island, North channel. Fire was caused by the upsetting of a can of kerosene oil.

On November 8, 1913, the ss. *Leafield*, of Newcastle, G.B., is believed to have foundered off Keweenaw point, Lake Superior, which resulted in the loss of all hands, supposed to be twenty in number.

*Port Arthur Division.*—On January 1, 1914, the tug *Sarnia*, of Port Arthur, while lying at the Subway dock at Fort William, had the upper works gutted by fire. Neither the hull nor the machinery was damaged; cause of fire unknown.

*Vancouver Division.*—On May 9, 1913, about 2 a.m., the freight steamer *Ophir*, owned by the Lincoln Steamship Company, Limited, while at the Brunswick cannery, Canoe Pass, B.C., took fire in the quarters occupied by the crew, six of whom were suffocated while asleep. The hull was totally destroyed, boiler and machinery afterwards salvaged. Cause of fire unknown.



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On July 13, 1913, the gasoline passenger vessel *Christella* owned by the Inland Transportation Company, Limited, of Vancouver, B.C., caught fire while anchored off Deadman's island, Vancouver, in charge of a watchman, and was burned to the water's edge, becoming a total loss. Cause of fire unknown. No lives were lost.

On February 26, 1914, the tug *M. T. Co. No. 2*, owned by the Metropole Transportation Company, Limited, of Vancouver, B.C., while at Port Moody, caught fire in the engine room. The fire getting beyond control, the vessel had to be towed out to deep water where she burned to the water's edge and sank, becoming a total loss. No lives were lost.

On February 3, 1914, the steamer *Vadso*, owned by the Boscowitz Steamship Company, Limited, of Victoria, B.C., when off the Milor peninsula, struck an uncharted rock and foundered in deep water about twenty minutes after striking. No lives were lost.

*Victoria Division.*—On April 13, 1913, the ss. *Princess Sophia*, while on a voyage from Skagway to Victoria, stranded on Sentinel reef, situated at the southern end of Lynn canal, Alaska, and sustained considerable damage to stem and bow plating, etc., filling forepeak and forward ballast tanks with water. At high water, the same day, the vessel floated and proceeded to Victoria. Extensive repairs were effected on the British Columbia Marine Railway's slip, on the completion of which the vessel returned to Victoria.

On May 2, 1913, the ss. *Prince Albert*, entering Port Simpson, grounded on Alexander reef at 3.20 a.m., receiving considerable damage to hull plating, forward to amidships, lifting floors in bottom ballast tank. After discharging 30 tons of cargo, the vessel refloated at 3.40 a.m. the following day, and proceeded to Victoria. Repairs were carried out by the British Columbia Marine Railway Company at Esquimalt.

On June 21, 1913, the ss. *Protective*, whilst entering Brentwood bay, Saanich inlet, going slow, grounded on rock and pivoted on keel 15 feet from stern post. With the falling tide the vessel listed and gradually went over on port side to an angle of 80° and remained in that position until 7 p.m. the following day, when with the assistance of the salvage steamer *Salvor*, she was floated; and having sustained much damage to hull planking she was towed to Victoria and placed on the Victoria Machinery Depot's slip for repairs.

On August 30, 1913, the ss. *Trader*, while on a voyage from Victoria to New Westminster, broke the L. P. cross-head and cylinder cover. The vessel returned to Victoria, where repairs were effected, after which she proceeded on her voyage.

On October 25, 1913, at 4.30 a.m., the Canadian Government tug *Point Hope* collided in Victoria harbour off Shoal point with the United States steamer *Dispatch*. As a result, the hull of the *Point Hope* was seriously damaged above the water line, and damage of a minor extent to steam connections in the engine room was sustained. The vessel was hauled out on Turpel's ways and repaired.

On November 4, 1913, the ss. *Skookum*, proceeding from Westbank to Penticton, and towing a scow loaded with cement, collided with car barges which were being pushed ahead of the Canadian Pacific Railway tug *Castlegar*, completely wrecking the superstructure of the *Skookum*, and causing loss of equipment and damage to hull, above water line. Two of the crew suffered slight injuries. The vessel was hauled out for repairs at Naramatta, the upper works being entirely renewed, and extensive repairs effected to hull.

On December 2, 1913, the ss. *Prince Albert*, when leaving the port of Jedway, grounded on hard bottom, sustaining damage to stern post. Repairs were carried out on the "ways" of the British Columbia Marine Railway Co. at Esquimalt, B.C.

On December 20, 1913, the ss. *Prince George* stranded at the entrance to Vancouver narrows during a dense fog, sustaining considerable damage to bottom at No.



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1 hold. The vessel, after being aground for  $3\frac{1}{2}$  hours, floated and proceeded to Victoria. Permanent repairs were effected by the British Marine Railway Company on the Government dry dock, Esquimalt.

On January 25, 1914, at 10.28 a.m., the ss. *Princess Sophia*, on a voyage from Skagway, Alaska, to Victoria, with freight and passengers, stranded on a point in Johnson strait,  $1\frac{1}{2}$  mile east of Port Neville, sustaining considerable damage to bottom and forefoot. At 2 a.m. the following day the vessel was floated and taken to Port Harvey for temporary repairs, on completion of which she steamed to Victoria. Permanent repairs were carried out on the ways of the Victoria Machinery Depot.

On March 2, 1914, ss. *Prince John*, whilst making a landing at Swanson bay, collided with the Canadian Government steamer *Newington*, which was lying at the wharf, doing damage to several plates on the starboard quarter of the *Newington*. The latter proceeded to Victoria and was repaired at the Government dockyard, Esquimalt.

On March 21, 1914, the ss. *British Empire*, while entering North passage, Finlayson channel, collided with a rock on the east side of Boat bluff, on the south end of Sarah island, on account of which she sustained considerable damage to the bow under water line. The vessel afterwards proceeded to Vancouver, where permanent repairs were carried out.

I would respectfully call your attention to the appendix to this report, published separately, in which will be found tables as follows, for the fiscal year ended March 31, 1914:—

(1) Steamships inspected, with their gross tonnage, and with the number of passengers they were certified for, the date of expiry of certificate, and trade and route for which they were certified.

(2) Steamships not inspected, with their gross tonnage, the trade in which they would be employed, and reason for not being inspected.

(3) Steamships added to the Dominion, with particulars as to their tonnage, power, etc.

(4) Steamships lost, broken up or otherwise taken out of commission, with gross tonnage, reason of removal from commission, etc.

(5) Certificates of competency granted to engineers, with the grade of certificate issued, etc.

I have the honour to be, sir

Your obedient servant,

T. R. FERGUSON,

Chairman.



TABLE showing the Number of Inspections made, Fees collected, etc., during the Year ending March 31, 1914.

Division.	NUMBER OF INSPECTIONS MADE, WITH GROSS TONNAGE OF VESSELS INSPECTED.		Number of Vessels not In- spected with Gross Tonnage.		Total Number of Vessels subject to Inspection when in Com- mission, with Gross Tonnage.		Number of Vessels added to the Dominion with Gross Tonnage.		Number of Vessels Lost, Broken up or de- stroyed, with Gross Tonnage.		Fees collected by Inspectors.	
	Vessels Register- ed or owned in the Dominion.		Vessels Register- ed or owned elsewhere.									
	No.	Gross Tonnage.	No.	Gross Tonnage.	No.	Gross Tonnage.	No.	Gross Tonnage.	No.	Gross Tonnage.	On account of Inspec- tions.	On account of Examina- tions of Engineers.
Nova Scotia.....	190	67,554	21	56,217	237	125,114	8	5,510	1	2,567	1,466 64	160 00
New Brunswick .....	154	21,109	16	26,444	201	55,495	13	3,209	7	449	602 80	98 00
Quebec.....	93	22,317	5	6,825	113	29,930	8	3,077	3	153	.....	111 00
Sorel.....	116	42,841	1	3,521	131	48,071	21	9,036	3	3,097	.....	157 00
Montreal.....	195	30,776	4	10,533	226	42,079	11	6,067	4	1,698	.....	184 00
Kingston.....	161	38,236	21	9,030	196	49,353	9	6,284	4	310	.....	115 00
Toronto.....	332	166,252	62	73,339	440	242,386	20	10,221	3	80	138 40	225 00
Collingwood.....	122	36,195	6	10,499	157	50,170	6	14,901	6	8,083	.....	152 00
Port Arthur.....	93	50,039	11	18,522	122	69,694	9	15,929	2	106	.....	80 00
Manitoba and N.W. Provinces...	63	7,976	.....	.....	111	10,278	5	644	5	452	45 68	83 00
Vancouver and Yukon.....	256	51,711	11	7,969	315	64,866	22	5,971	11	5,554	270 32	275 00
Victoria.....	146	69,030	27	29,515	192	110,781	19	4,439	6	864	805 12	229 00
Totals.....	1,921	604,036	185	252,414	2,441	898,207	151	54,928	55	23,463	3,328 96	1,869 00



## APPENDIX No. 13.

HARBOUR COMMISSIONERS REPORTS OF MONTREAL, QUEBEC,  
TORONTO, THREE RIVERS, NORTH SYDNEY, PICTOU AND  
BELLEVILLE.

ANNUAL REPORT OF THE HARBOUR COMMISSIONERS OF MONTREAL FOR THE YEAR 1913.

MONTREAL, February 20, 1914.

To Hon. J. D. HAZEN, K.C., M.P.,  
Minister of Marine and Fisheries,  
Ottawa, Ont.

SIR,—In compliance with section 51 of the Commissioners' Act, 57-8 Victoria, chapter 48, the Harbour Commissioners of Montreal herewith respectfully submit their annual report of operations for the year ending December 31, 1913, embracing a full account of all moneys by them received and disbursed, and describing the improvements made or under way.

We have the honour to be, sir,

Yours very respectfully,

W. G. ROSS, *President.*

F. ROBERTSON,

A. E. LABELLE,

*Harbour Commissioners.*

## HARBOUR COMMISSION OF MONTREAL, 1913.

The present board of harbour commissioners assumed office on the 1st January, 1913, and during the first few months had many problems to study and a programme of development and construction work in progress to consider, demands from the shipping companies for berths which were not available, for railway traffic which could not be accommodated, and they were deluged with urgent appeals from the grain trade and grain commission for more facilities for the storage and handling of grain.

The work of developing and improving the harbour facilities has been pushed with all the energy at command, under the stimulus, not only of the normal increase of the business of the port, but especially in the endeavour to provide facilities for steamship lines and others desiring to establish business at the port of Montreal.

An outline of the work done is summarized below:—

## REORGANIZATION OF ACCOUNTING DEPARTMENT.

On assuming office, the commissioners took up the question of the accounting system, two sets of books being kept by the corporation, the secretary-treasurer having charge of both the collection and disbursement of moneys, direct control of the general ledger, and certain principal accounting records, while the chief engineer,



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who prepares and is responsible for the estimates, had control of the distribution of materials and supplies, the keeping of time, and the engineering cost records, all of which did not provide an effective system of internal check.

As recommended by the Public Service Commission, 1912, which investigated the transactions of the harbour commissioners of Montreal, on July 1, a comptrollers' department was organized, having entire responsibility for all accounting and cost records of every department, including the preparation of bills, certification of vouchers, time-keeping and store records.

## POLICE DEPARTMENT.

A harbour police department was organized on the 1st of May with a view of assisting the police of the city of Montreal in affording police protection to persons and property within the harbour, and of controlling and systematizing the vehicular traffic in order to minimize the congested state of the wharves, which is caused mainly by the large number of teams desiring entrance to piers, sheds, etc., at certain hours, as well as the traffic prior to the arrival and departure of steamers.

As it is impossible to forbid free movement of trains, which would in a great manner decrease the efficiency and handling capacity of the port, this department was of inestimable assistance to the railway department, not only in the regulating of traffic, but also in clearing the wharves of undesirables, as such have been nearly all the sufferers from accidents in the past.

Two hundred and sixty-eight prisoners were brought before magistrates and recorders during the year.

## VESSEL TONNAGE OF THE PORT.

Notwithstanding the marked depression in trade in the commercial world during the latter part of the season, due to which, it was not expected that the tonnage of the port would show great increase, it is most gratifying for the commissioners to be able to announce that the past year has been a record one, as far as shipping is concerned, returns eclipsing by far those of any previous year, as may be seen from the statements appended hereto, showing respectively, for the past ten years:—

1. The number and tonnage of all vessels.
2. Classification of transatlantic vessels.
3. Classification of vessels from the Lower St. Lawrence and Maritime Provinces.
4. Number and tonnage of sea-going vessels and their different nationalities, also the number of men that manned the vessels.
5. The opening and closing of navigation, the first arrival and last departure of vessels, and the greatest number in port at one time.

An increase of 1,340,311 tons in ocean and inland vessels is recorded.

The season of navigation was also lengthened by the opening of navigation in the port fourteen days earlier than in the year 1912, and the closing six days later.

## NEW STEAMSHIP LINES, ETC.

On the 22nd of May, the ss. *La Touraine* of La Compagnie Generale Transatlantique arrived in the port of Montreal, thus inaugurating a new direct service between Havre, France, and Montreal, and while only two sailings took place from the port during the season, it is expected that a regular service will be established during the year 1914.

The ss. *Andania* and other liners were added to the services already in operation from the port, and it is expected that the season 1914 will witness the arrival of the new ss. *Regina*, 16,000 tons burthen, of the White Star-Dominion Line, and the *Alsatian* and *Calgarian* of the Allan Line, and an additional number of tramp steamships.



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The addition of new steamship lines and steamships annually is convincing justification of the adoption of the scheme of harbour development undertaken during the past year to provide additional berthing accommodation. When we find steamship lines expanding or entering new ports, it may be assumed that the management of these corporations have satisfactory assurance that the outlay is justified by the profits to be had in trading to the port of Montreal. Such expansion or increase in tonnage means the necessity for more and better facilities in the port that expects to handle it; and if the port of Montreal is to keep pace with this shipbuilding and procure its proportionate share of the prosperity which the present activity forecasts, then it must immediately provide the piers, the docking spaces, the railroad and storage facilities which any material increase in this port's commerce will require.

#### RAILWAY DEPARTMENT.

*Winter operations.*—During the winter months, three of the harbour freight sheds were occupied for the distribution of railway freight, the railway traffic of the sheds with the team traffic and interchange of freight between railways keeping the car receipts well above former years, the increase over 1912 being more than 30 per cent.

*Car handling.*—The operation of the season of navigation began somewhat earlier this year than in the past, and by the latter part of April, import and export freight was being handled. The first two months of the season, May and June, were exceptionally heavy, and gave promise of a very successful season. Unfortunately, thereafter, the effects of the trade depression throughout the country was seriously felt, and at no time after July 5 did the car receipts come up to the returns of last year.

The decrease in car handling during the season of navigation was over 2,000 cars. Observations show that this reduction was due principally to the falling-off of shipments of apples, lumber, and hay for export, as well as a decrease in local freight. In 1912, 293,847 barrels of apples were exported from Montreal, whereas this year the shipments handled totalled only 207,926 barrels, a decrease of, approximately, 560 cars.

Car handling at the freight sheds, however, shows an increase of 12 per cent due to the fact that three more sheds were put into service this year.

In spite of the large amount of construction work and improvements to the railways tracks, the operations of this department were conducted successfully throughout the whole season.

#### PRESIDENT'S WESTERN TRIP.

Taking advantage of an invitation extended by the R. & O. Navigation Co., the president, on the 3rd June, 1913, attended the launching at Port Arthur of the steamer *Noronic*, after which ceremony an opportunity was afforded to impress upon the large grain exporters the advantages of the Canadian route and the economic facilities created at the port of Montreal for the handling of the products of the west. A mass of valuable information was collected and has been printed in a separate report, comprising a study of grain transportation, elevator tariffs, etc.

#### TRIP TO BUFFALO.

In October, the commissioners visited Buffalo where every courtesy was shown them in inspecting the elevator equipment at the port for the handling of grain.

#### CONFERENCE OF PORT AUTHORITIES.

On December 9, 10 and 11, the commissioners attended at New Orleans, La., the second conference of the National Association of Port Authorities of the United States. The three days' session afforded excellent opportunities for stimulating interchange of ideas, information on port construction and views as to proper port admin-



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istration. Much satisfaction was there felt at the unanimous expression of opinion from the leading harbour authorities of the continent that the port of Montreal afforded one of the best examples of modern seaport organization, possessing unity of control, opportunity for expansion and a carefully prepared plan permitting of such expansion for generations to come, adequate articulation of land and water factors and co-ordination of their uses under intelligent supervision, which have had the effect of bringing into most effective operation all of the separate factors, which, combined, best serve the terminal needs of a seaport community.

## PASSENGER BUSINESS.

That the St. Lawrence route is becoming more favourably known each year as a great passenger highway is clearly shown by the returns, which show an increase eastbound and westbound for the year of 20 per cent over that of 1912.

## ENGINEERING DEPARTMENT.

The construction work is almost universally carried on departmentally. The steady growth of the harbour and the constant yearly effort to keep pace with the commerce, has resulted in the commissioners having a splendid plant for the peculiar construction required. Dredging plant, tugs, derricks, and a shop for repairs, are all kept up-to-date, and the organization for construction is capable of dredging and placing in the works some two or three million cubic yards of excavated material, of building half a mile of cribwork and concrete quay walls of a height from the foundations to the cope of 60 feet, of building fifty thousand cubic yards of concrete, constructing railways, walls, culverts, and, in fact, almost every phase of port construction.

This department has during the year carried out the following.

*Harbour improvements.*—A successful construction season, no serious accidents in the port, satisfactory labour conditions and the best season on record with regard to the operation of harbour facilities.

The harbour commissioners' railway line was completed to high level, along the river front from Molson's creek to Racine pier.

Two permanent transit sheds were finished and opened for traffic on the Tarte pier.

The harbour commissioners' elevator No. 2 and its connecting conveyor system to all the berths in the central part of the harbour, was operated during the whole of the season with perfect success.

Harbour commissioners' elevator No. 1, situated in the most favourable position in the harbour for receiving and delivering grain was fully operated during the season, although an addition of one and a half times its present storage capacity was being constructed.

The dry dock site, providing a large basin for the floating dock *Duke of Connaught* and a large area of made land for the shipyard, was advanced almost to completion.

New quay walls of standard cribwork substructure and concrete superstructure were completed, having a total length of over 2,200 lineal feet and 2,000 lineal feet partly constructed.

Railway tracks to the extent of about 4 miles were constructed and an additional 1 mile improved and relaid.

The removal of the artificial works at Moffatt island was greatly advanced and its ameliorating effect on the St. Mary current towards the close of the season was very marked.

One of the important items of new work commenced was the construction of a large industrial wharf at Pointe-aux-Trembles.



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Another new work commenced was the construction of two new transit sheds on the high level bulkhead wharves, sections 24 and 25.

A new electric hoist, with bridges, connecting with the upper stories of the sheds on the Alexandra pier was constructed during the season.

Important items of paving on the wharves were completed and the roadways were put in a very much improved condition.

A commencement was made towards the re-construction of the superstructure of the wooden piers in the central part of the harbour, consisting of the substitution of concrete for the portion of the quay walls above low water level.

Important additions and improvements were made to the Harbour Commissioners' construction and operating plants.

#### HARBOUR EXTENSIONS.

*Elevator No. 1.*—Elevator No. 1, the original unit of the harbour commissioners' grain elevator system, was completed in 1904. For the first three or four seasons, the amount of grain handled was very limited, owing to the fact that the conveyor system had not been completed. In 1908 and 1909, with the completion of the group of transit sheds and conveyor system, the regular business of this elevator commenced, and for the last four years, it has been worked to its full storage capacity, on several occasions, during great rush of grain inwards, leaving many vessels waiting to unload.

Representations having been made to the harbour commissioners that additional facilities were urgently required so as to carry as much as possible of the Canadian export grain by the St. Lawrence route during the seven months of the open season, the harbour commissioners, after careful consultation, adopted the plan of constructing an addition to elevator No. 1, which would increase its capacity from 1,000,000 to approximately 2,500,000 bushels, and in proportion increase its working capacity. Construction work commenced early in the spring of 1913, and at the close of the season the addition is almost completed and it is only necessary to connect up the working machinery with the original elevator, which can only be done conveniently in the winter, when operations are closed.

*Elevator No. 2.*—A complete description of this elevator and its conveyor system was published in the annual report for 1912.

The chief feature of the harbour commissioners' elevator system is the situation of the various units for the convenience of the trade. The elevators are so located that grain may be kept in storage until required by the ocean vessels at their berths, and then delivered without interrupting in any way other stevedoring operations.

The grain is delivered to the vessels from the elevator by rubber belt conveyors to an extreme distance of 3,540 lineal feet. The power required to drive the belts and the necessary elevations and cut-offs is about 75 horse-power for each 600 lineal feet. The very complete and convenient system, therefore, while a great convenience to the trade, is not carried on without operating expense and careful management, and it is to the credit of the elevator staff that during the season of 1913, a quantity amounting to almost 44,000,000 bushels of grain was delivered without any serious mishap or mistake.

Elevator No. 2, with its capacity of 2,622,000 bushels, is not only one of the largest elevators at any ocean port, but it is conceded to be of the highest type of construction and most conveniently equipped of any elevator yet constructed.

Although 1913 was the first year of complete operation, this elevator received 20,800,000 bushels and delivered by conveyor system the same amount.

Almost from the opening of the season until the very close the storage capacity of the elevator was taken up to the utmost limit. If the ocean vessel tonnage had been sufficient to relieve the congestion of grain in store, the record of this elevator would have been very much higher, and transportation of Canadian grain by the Canadian St. Lawrence route would have been increased to a very large extent.



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Although construction work on the addition to elevator No. 1 was carried on during the whole of the working season, this elevator was operated to its usual complete storage capacity.

*Floating elevators.*—During the season of 1913 six floating elevators were kept in commission and available for work at all times for the direct transference of grain from lake vessels to the ocean steamships.

The quantity of grain transferred was slightly higher than last year, the whole operation being carried on without any trouble.

*The improvement and extension of the harbour railway tracks.*—In order to make the port of Montreal the best possible terminal connection between the Transcontinental Railways systems of Canada and the North Atlantic steamships, the shore area of the harbour has been designed as a convenient railway terminal. The railway tracks being operated directly by the harbour commissioners, such supervision can be made of traffic as to permit of extensive shunting and to give convenient access for railway freight to all points on the wharves at all hours, day or night.

The Grand Trunk and the Intercolonial railways connect with the harbour front at its extreme upper or westerly end. The Canadian Pacific and Canadian Northern railways reach the harbour towards the lower or eastern end.

The large harbour transit sheds, otherwise idle during winter, are very well adapted for the handling and delivery of steamship freight by rail from winter ports.

The railway terminals of the harbour commissioners which are being developed on the two shores of the St. Lawrence concurrently with the increased facilities being constructed for shipping have been considerably extended during the season of 1913.

From Victoria pier eastward the high level embankment for the railway grain yard and for the general tracks was improved and a system of drainage installed. A carriage way and sidewalk with ornamental electric lighting fixtures were completed along the completed portion of the wall between Victoria pier and Beri.

Additional retaining walls were completed for the whole of the low level portion of the market basin.

Farther eastward a siding was laid into the new harbour yard.

A new subway at Aylwin street, the construction of which was urged by the city authorities, was commenced and one half of the abutments are already constructed.

On the Tarte pier, new tracks were laid in connection with the new system of sheds completed during the season.

A new transfer siding was constructed for the Canadian Northern Railway Company at sections 53 and 54.

The tracks from Molson creek to Ravine wharf were raised to an average height of 6 feet to bring them above flood level.

The embankment was strengthened throughout the whole distance and rip-rapped to protect it against the wash of the river at high water.

*Victoria pier and Market basin.*—In the scheme of harbour extensions of 1909 every consideration was given not only to the enlargement of steamship accommodation, but also to give additional and convenient accommodation to the important fleet of river and ferry steamers.

It was recognized that the river steamers, which do a tremendous passenger and market traffic, should have a location in the harbour convenient to the centre of the city and to the Bonsecours market.

The construction of this large pier in the very centre of the congested harbour district is one of the most serious matters occupying the attention of the engineering department. Every effort is made to advance the work without undue cost and also not to interrupt the immense traffic which is carried on during the seven months of the navigation season.

The portion of the superstructure of the high level quay wall built to half height in 1911 was finished during the season of 1913. Two additional cribs and the half



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height of quay wall were completed on the outer southeast corner of the high level portion of the new Victoria pier. On the inside of the Market basin 268 feet of crib-work was constructed and the concrete wall built to the Market basin level. The area between the outside and inside walls of the pier has been largely filled and the retaining wall dividing the high and low level portions was constructed to the full extent of the completed work.

*Shed No. 16 on the high level Victoria pier.*—This shed, almost completed in 1912, was allotted to the Canada line for the season of 1913, although the lower floor, owing to settlement of the new filling material, was not finished. The tracks were constructed on both sides of this shed and a trucking platform built of timber on the eastern side, for convenience in handling railway traffic.

*Permanent sheds, Tarte pier.*—The two sheds on the eastern side of the Tarte pier, under construction in 1912, were completed and opened for traffic at the commencement of the season. Railway tracks on both sides of the sheds were built and considerable work done on the roadways in the vicinity. As soon as the filling material has completely settled, it is proposed to pave the pier between the sheds.

*Sheds Nos. 24 and 25.*—The new quay wall having been built to high level, from the end of the Market basin, eastward to section 26, instructions were given to put in the foundations for two new transit sheds before the area inside the quay wall was filled.

Tenders were called for piling and the contract let to the Raymond Concrete Pile Co. of Canada, and work started on 1st October and the last pile was driven on 22nd November. The number of piles driven was 1,225, the average depth being 20 feet, and the maximum 40 feet 9 inches.

As the piles were driven to the old level of the wharf, viz., to elevation 107, and as the flooring of the new sheds was designed to be elevation 124, the concrete piers resting on the piles required the placing of some 6,000 cubic yards of concrete.

This work was started by the harbour commissioners' departmental organization on October 9, and was practically completed at the end of the year.

Tenders are at present advertised for the construction of sheds on these concrete piers so as to be available some time during the season of 1914.

Shed No. 24 is designed for the use of either coasting steamers, or large ocean steamers which do not require a full length of shed. The berth extends beyond the shed along the quay wall for part of the sloping ramp leading from high level down to the Market basin.

The dimensions of sheds 24 and 25 are as follows:—

Shed 24.. . . . . 264 feet by 105 feet.

Shed 25.. . . . . 484 feet by 105 feet.

*High level wharves, sections 24 to 27.*—Part of the old low level quay wall extending from the low level market basin at Berri street, eastward, was widened and strengthened and rebuilt on a 4 per cent grade from elevation 107 up to elevation 119, standard high level. From the top of the grade the quay wall was continued eastward. The portion of this work, of which the concrete quay wall had been constructed to half level in 1912, was completed. A further extension of three cribs was added during the season of 1913 and the concrete quay wall built up to half level. The re-filling behind these walls was carried out to the low level height and anchor blocks and tie rods completed.

*Dry dock site.*—This site is completely on harbour property; no roadway or railway lines will be cut and navigation is not in the least disturbed. The dock is located conveniently to some of the newest and most extensive industrial organizations in Montreal.

A description of the floating dock and general dimensions were given in the annual report of 1912.



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During the season of 1913 practically all reclamation work necessary for the launching slip and for the shops was completed. Work was carried on to the latest available date to complete as much as possible the site for the last building, the boiler shop.

Excellent work was done during the season in dredging of the approach channel. Owing to the high water the deep basin could not be cleaned up and completed this year as expected.

The concrete quay walls built to half level last year were completed and the balance of the cribwork, as designed for the site, was completed during 1913 and the concrete wall built to half level.

Owing to alterations in the plans of the Canadian Vickers, Limited, a portion of the quay wall at the head of the basin had to be removed and this work is being done by the Harbour Commissioners at the request of the Canadian Vickers, Limited, and at their expense, and the return wall for the slip is now constructed to half level. The southeast slip wall was concreted during the season and the southwest slip wall is now under construction.

General work on the tracks on the site, grading and rip-rapping of the outer embankment was also carried on.

*New wharf, Pointe-aux-Trembles.*—A wharf was designed to meet the requirements of the Canada Cement Company as well as for public purposes. On the company guaranteeing sufficient revenue for interest and maintenance, the commissioners obtained the authority of the government to proceed with the construction of the wharf.

The company owns the land directly to the harbour commissioners' boundary line, and they propose to carry all shipments to and from the water front by their own railway lines.

The wharf is designed to extend to deep water, to have a bulkhead quay wall 600 feet, and a wharf area, upon which a permanent coal handling plant will be constructed for unloading vessels, and for the storing of coal.

The order was given for this wharf about the middle of September, and before the close of navigation the cribwork substructure for a length of 400 feet and the concrete wall to one-half level had been completed.

Most of the dredging has been completed and a large amount of filling extending from the shore out 450 feet to the wharf and sufficient to protect the portion of the quay walls already built for the winter.

*Reconstruction of wooden quay walls.*—The wooden quay walls in the central part of the harbour constructed about fourteen years ago, are now reaching their age limit for the portion exposed above low-water level.

The tearing down of the old wooden quay walls and their reconstruction in concrete was commenced last year, and during 1913 considerable work was done on the eastern side of Jacques Cartier pier, opposite shed No. 13.

This work is very difficult to accomplish, owing to the fact that work can only be carried on during the absence of ocean steamships.

Sheet piling was driven along practically the whole of one berth, and it is proposed to carry this work on to a certain extent each year, so that the whole may be reconstructed before the wooden walls entirely fail. The portion of the cribwork under water is practically permanent and does not require rebuilding. The sheet piling is being driven along the face of this cribwork so as to add to its strength and for increased support of the heavy concrete wall, and also to permit of deepening the berths.

*Moffatt island.*—The removal of the artificial works, for the purpose of deflecting as much as possible of the water down the south channel, was continued during the



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season. The whole of the artificial works on the west or Montreal side of Moffatt island were removed, and the approach to the island from the south shore was stripped and five new openings made in the embankment.

The excavated material was all used to protect the bank of the river eastward of Victoria bridge and a railway embankment was built for a length of about half a mile.

*Longueuil wharf.*—The old Government wharf at Longueuil was filled up and such work as was required to make it available for use of the ferry to Maisonneuve was carried out.

*Dredging and filling in general.*—Two of the harbour commissioners' dredges were engaged for the greater part of the season in deepening the channel south of St. Helen island. This work is being done to eliminate as much as possible the St. Mary current and to allow a part of the flow of the river to pass down between St. Helen island and the south shore, as it did in former years, before the construction of Moffatt island wharf and the deepening of the harbour.

The dredging was done to 20 feet at low water, the channel being made 180 feet wide. The length completed was 2,000 feet, the area dredged being about 8 square acres, all having to be excavated from low water level to the required depth.

A small dredge was also engaged all season removing a shoal between St. Helen island and the Guard pier. This dredge worked in the strongest current in the river and where the material was all boulders.

The area dredged to a depth of 10 feet at low water was 2 square acres. Over 300 boulders of considerable size were taken out and many large boulders had to be blasted before dredging.

The removal of the old Guard pier and general deepening and widening inside the Guard pier progressed favourably during the season.

The area dredged was some 520,000 square feet, or about 12 acres. As this widened channel was completed, the buoys were placed in new positions so that navigation would have the advantage of the improvements.

For the widening and deepening of the channel in the central part of the harbour, considerable rock work has to be done from year to year. In 1913 the harbour commissioners' drilling and blasting boat was employed at Section 14 to 17-S. Work commenced April 23 and continued until November 25. The material drilled and blasted was hard black shale and trap rock. The number of holes drilled and blasted was 3,009, the average depth of the holes being 8 feet. The quantity of rock drilled and blasted measured in situ was about 40,000 cubic yards; 15,500 pounds of dynamite were used.

A government elevator dredge did excellent work in the St. Mary current, widening the channel.

The length dredged was 1,900 feet by a width of 300 feet, covering an area of about 13 acres.

The first harbour commissioners' dredge started work in 1913 on April 14, and continued working up to December 13.

*Harbour construction plant.*—Almost all of the harbour commissioners' construction plant is worked day and night throughout the season.

This plant, subjected to such hard duty for seven months, requires heavy repairs every winter, and the commissioners' shop and shipyard are admirably adapted for such a purpose.

The plant of the harbour commissioners consists of: Five dredges, six derricks, ten tugs, one floating crane, two drill boats, one coal barge, two floating concrete mixers, thirty-five scows, five locomotive cranes and a variety of dump and flat cars and construction locomotives, pile drivers, and general plant.



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The new plant completed and put in operation in 1913 consisted of the following:—

- Dredge No. 6, 104 feet by 39 feet by 10 feet 3 inches at bow.
- Derrick No. 7, 88 feet by 31 feet by 9 feet 8 inches.
- Tug *Passe-Partout*, 50 feet 6 inches by 12 feet 7 inches over all.
- Three flat scows, 100 feet by 30 feet by 9 feet.

MAINTENANCE.

The maintenance of the harbour wharves, railways, roadways, buildings, and equipment is now becoming a very important item. Repairs are required everywhere, and the cleaning of the wharves and roadways is a work of considerable extent. The maintenance organization constantly employs a staff of repairers, pavers, iron-work men, painters, sweepers, and carpenters.

During the season 1913, the wharves were kept in excellent condition, and although the summer was very dry the watering of the extensive areas of roadways gave general satisfaction.

Lighting of the wharves required 218 arc lamps.

Every effort is made to maintain a complete life-saving equipment all along the wharves, consisting of life-buoys, ropes and long gaffs, and railings have been constructed at important corners of the wharves, and lights have been maintained at places which have proved liable to accident.

The maintenance and repairs to the harbour commissioners' extensive system of elevators and transit sheds were also carried out during the season by a staff under the inspectors.

*Maintenance of channels.*—For maintenance work, considerable dredging was done from time to time in the basins and channels as soon as any sign of shoaling was found in the testing operations.

All the material dredged by the harbour commissioners' dredges was saved and used in the construction of embankments and for reclaiming land areas for the harbour.

The following table gives the average monthly depth of water in the ship channel in the harbour during the season of 1913, as compared with the records for 1912; and also the monthly averages of the depth of water on the old No. 1 Lachine canal lock sill:—

Month.	Depth on old lock sill Lachine Canal.				Depth in Harbour Channel.			
	Average 1902-1912		Average 1913		Average 1912		Average 1913	
	Ft.	In.	Ft.	In.	Ft.	In.	Ft.	In.
May .....	20	0	20	3	35	5	35	8
June .....	19	7	17	10	25	10	33	3
July .....	17	4	16	3	32	0	31	8
August .....	16	2	15	4½	30	11	30	9½
September .....	15	6	14	11	30	8	30	4
October .....	15	5	15	1	30	8	30	6
November .....	15	6	16	0	32	2	31	5

*Berth and channel sweeping.*—The channels and basins were swept at intervals during the season commencing April 21, and dredging was done wherever found necessary. One hundred feet were added to the width of the channel off the New Victoria pier. This area was cleaned up and tested, and the buoys properly placed, making the channel 700 feet wide at this point.



OPERATION.

*Storage and handling of grain.*—The total quanttiy of grain handled during the last ten years by the harbour commissioners' elevator system, exclusive of the grain handled at the Grand Trunk and other local elevators, shows what improved facilities have accomplished:—

Year.	Total quantity of grain handled or transferred. Bushels.
1904.. . . . .	565,355
1905.. . . . .	4,356,568
1906.. . . . .	944,321
1907.. . . . .	1,078,289
1908.. . . . .	8,661,350
1909.. . . . .	11,691,071
1910.. . . . .	21,526,727
1911.. . . . .	21,007,164
1912.. . . . .	25,561,655
1913.. . . . .	43,349,291

The following table gives the records of the operations of the grain elevator since the house has been in commission:—

Grain Elevator No. 1.		Bushels.
Year.		
1904.. . . . .		565,355
1905.. . . . .		4,356,568
1906.. . . . .		944,321
1907.. . . . .		1,078,289
1908.. . . . .		8,661,350
1909.. . . . .		11,691,071
1910.. . . . .		14,906,569
1911.. . . . .		13,849,475
1912.. . . . .		16,179,503
1913.. . . . .		15,554,282

Grain Elevator No. 2.		
1912.. . . . .		2,346,930
1913.. . . . .		20,819,055

Floating Elevators.		
1912.. . . . .		7,035,217
1913.. . . . .		7,459,933

Elevator No. 1.

Grain received and in store—

Kind.	Bushels Received.	Total Bushels.
In store end of season 1912.. . . . .		71,525
Wheat.. . . . .	10,252,314	
Oats.. . . . .	1,880,822	
Barley.. . . . .	1,685,671	
Flaxseed.. . . . .	1,653,651	
Rye.. . . . .	81,824	
		15,554,282
Total.. . . . .		15,625,807

Grain delivered and in store—

Kind.	Bushels. Delivered.	Total Bushels.
Wheat.. . . . .	10,209,238	
Oats.. . . . .	1,926,148	
Barley.. . . . .	1,564,100	
Flaxseed.. . . . .	1,587,587	
Rye.. . . . .	81,824	
		15,368,897
In store end of season 1913.. . . . .		256,910
Total.. . . . .		15,625,807



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Of above there were—

Delivered by conveyors.. . . . .	15,334,145
“ cars (seventeen).. . . . .	30,637
“ teams . . . . .	1,938
“ bags.. . . . .	2,177
Total.. . . . .	15,368,897

Above grain received: By 178 steamers, 138 barges, and 2 cars.

Elevator No. 2.

Grain received and in store—

Kind.	Bushels Received.	Total Bushels.
In store end of season 1912.. . . . .	.....	854,562
Wheat.. . . . .	9,730,843	
Oats . . . . .	6,193,664	
Barley.. . . . .	1,875,689	
Flaxseed.. . . . .	2,762,900	
Corn.. . . . .	151,381	
Rye.. . . . .	99,580	
Buckwheat.. . . . .	4,023	
Peas.. . . . .	975	
	-----	20,819,055
Total.. . . . .		21,673,617

Grain delivered and in store—

Kind.	Bushels Delivered.	Total Bushels.
Wheat.. . . . .	9,612,596	
Oats.. . . . .	6,498,296	
Barley.. . . . .	1,583,343	
Flaxseed.. . . . .	2,585,087	
Corn.. . . . .	150,794	
Rye.. . . . .	83,936	
Buckwheat.. . . . .	6,409	
	-----	20,520,461
In store end of season 1913.. . . . .		1,153,156
Total.. . . . .		21,673,617

Of the above there were—

Delivered by conveyors.. . . . .	16,734,713
“ cars (1,396).. . . . .	1,872,897
“ teams... . . . .	1,124,036
“ bags.. . . . .	788,815
Total.. . . . .	20,520,461

Above grain received: by 1,825 cars, 216 steamers, and 195 barges.

Floating Elevators.

Grain transferred—

Kind.	Bushels.	Total.
Wheat.. . . . .	4,606,338	
Oats.. . . . .	936,068	
Barley.. . . . .	551,648	
Flaxseed.. . . . .	1,351,838	
Rye.. . . . .	14,041	
	-----	7,459,933



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Transferred by elevator No.	9	678,864
"	14	489,636
"	15	1,410,225
"	16	1,422,305
"	17	1,609,045
"	18	1,849,858
		7,459,933

Conveyor System.

Grain delivered by conveyors to following sheds:—

Shed No.	2	1,694,911
"	3	1,558,870
"	4	1,783,733
"	5	2,582,797
"	6	3,535,104
"	7	2,049,798
"	8	2,517,644
"	9	2,080,883
"	10	1,230,517
"	11	3,184,780
"	12	2,300,522
"	13	3,646,605
"	14	1,502,298
"	15	1,313,961
"	16	864,771
		31,847,194
Transferred to elevator No. 2		221,664
Total		32,068,858

Recapitulation.

Grain received and transferred by elevators—

Wheat.. .
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GRAIN TRADE AND MARINE INSURANCE.

While the foregoing statements show an increase of 74 per cent over the quantity of grain handled during 1912, sight must not be lost of the fact that of the 192,260,000 bushels of grain received by lake at Buffalo during the year, a little more than 67,000,000 bushels, nearly 35 per cent came from Fort William and Port Arthur in addition to which large amounts came in bond through Duluth and Superior, most of which should have been transported via the Canadian route and the port of Montreal.

A more striking illustration of the great leak in the main artery of Canadian grain transportation is secured by comparing the routing of shipments of grain from Fort William and Port Arthur for 1903 with those of 1913, the beginning and ending of a ten-year period, when approximately 28,897,000 bushels of grain were shipped from Fort William and Port Artuhr and 25,588,000 bushels were shipped from Montreal. Thus in 1903 the grain shipments from Montreal practically equalled the great lake grain shipments from Fort William and Port Arthur, whereas in 1913 they were practically only equal to about one-quarter of such shipment.

A study of grain transportation reveals the fact that the above condition, is due. in a great measure, to insufficient ocean tonnage from the port of Montreal. Present marine insurance rates make it practically impossible for tramp shipowners to accept



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Canadian business, the extra premiums required being more than the rate of freight from Canadian ports will permit, unless the steamship can make a number of consecutive voyages between the 1st of May and the 1st October.

Notwithstanding this handicap, it is encouraging to note that about fifty-five tramp vessels with full cargoes of grain sailed from the port during the season, which has aided considerably in establishing the present record.

It is, however, felt that if Montreal is to maintain her supremacy as a great grain shipping port, no endeavour must be spared in view of the large expenditure made by the Dominion Government in the widening and deepening in the channel and the provision of aids to navigation to bring about a considerable betterment in insurance rates for St. Lawrence business, which should permit of tramp tonnage trading to St. Lawrence ports on an equal basis with the ports on the American sea-board, where cheap ocean freight and insurance rates exist.

In view, however, of the great attempt being made by the ports on the American Atlantic sea-board to capture a share of our grain trade, as is demonstrated by the following paragraph in one of their last annual reports:—

Our principal hope for export tonnage to remedy the deficiency which now exists, lies in Canadian grain. Not only in winter, but also in summer, Montreal is going to require more and more to be relieved of the burden of Canadian exports.

The commissioners feel that, until a substantial reduction in insurance rates is effected, serious and earnest consideration should be given by the Government to the advisability of granting a subsidy to tramp vessel owners, equivalent to the difference in marine insurance rates to American ports and the St. Lawrence river ports, which would, without doubt, make Montreal what she is destined to become, the greatest grain-shipping port in the world.

## ELECTRICAL BRANCH.

During 1913 there was a considerable increase in the demand for power over the entire plant from the electrical department, which has entire charge of the installation and operation of the electrical equipment of the harbour.

*Extension to System.*—There is under construction an extension to No. 1 station of approximately 675 k.w. transformer capacity to take care of the extension to No. 1 elevator.

Several small machines, ranging from 5 to 15 h.p. have been installed in the engine shops for driving the machine shops and pumping plant at the round house.

*Shed No. 16 lighting.*—From No. 2 station a system has been installed for the lighting of shed No. 16, on both floors, and in offices, using four-light tungsten clusters 40 watt lamps, and large enamel reflectors distributing light in the centres of the bays. On the outside we have used strong flame type yellow arc lamps approximately 2,500 candle power each.

*Extension of harbour arc lighting on high level wall, Victoria pier.*—The arc lighting system from No. 2 station has been extended from Berri street subway to within a short distance of Beaudry street subway. Arc lamp standards have been erected along the high-level wall and Adams-Bagnall lamps have been placed on these standards as far as they extend. The total number of lamps of this type in use throughout the season was thirty.

*Other flame arc lighting.*—Several smaller flame lamps were used at No. 1 and No. 2 elevators and shed No. 16, totalling about 60 lamps of this type in use.

*No. 7 derrick.*—A complete lighting unit was installed on No. 7 derrick comprising 19 horse-power g. e. marine type engine direct connected to a 7.5 k.w. generator D.C. 125 volts. A blue Vermont marble switchboard with the necessary



instruments, switches, and controllers was installed to control the arc lighting and incandescent lamps on the derrick. All wiring was placed in steel conduit, as this method of protecting the electric wires is found most satisfactory for this class of work.

*Longueuil wharf lighting.*—During the season of 1913 a system of street lighting was installed on the wharf at Longueuil for the convenience of passengers using the ferry service.

The operating staff carried on the service without any serious delay or accidents under somewhat severe conditions, as the contractors' construction work was going on at the same time.

FLOATING CRANE.

The harbour commissioners' floating crane was operated throughout the season, as follows. The season commenced April 16 and closed December 11, 1913:—

Number of days working.. . . .	127
Number of hours working.. . . .	581=28½ per cent.
Percentage of time in actual operation (hrs.).. . . .	404=about 20 per cent.
Total number of lifts:—	
Commercial.. . . .	422
Commissioners' service.. . . .	70
Average weight of lifts:—	
Commercial.. . . .	14.93
Commissioners' service.. . . .	20.97
Greatest lift:—	
Commercial.. . . .	60
Commissioners' service.. . . .	60
Total weight lifted during year.. . . .	6,771.49
Total weight lifted during 1912.. . . .	5,510

*Report of the saw-mill and timber boom.*—The saw-mill was in operation 279 days.

The quantity sawn during the season was 4,664,533 feet of hard and soft wood at an average cost of \$3.10 per M feet, b.m., composed as follows:—

Eighty-six lockages of round hemlock, pine and spruce, 587,520 lineal feet; 500,536 lineal feet of this was sawn up and delivered to the cribwork, etc.; 86,982 lineal feet of this was lifted with derrick out of water on the Bickerdike pier for winter work and spring stock.

The timber used during the year was as follows: 588,213 lineal feet, 2,146,598 feet, b.m., 10,544 railway ties, 441 cords of slabs, 3 loads of slabs.

MACHINE SHOP AND SHIPYARD.

The machine shop and shipyard, situated on the Mackay pier, are fitted up specially for the construction and maintenance of the dredging and construction plant.

The shop is an old wooden structure, but well equipped with excellent tools and machinery. There is also an excellent smith shop and boiler shop, both equipped for building and repairing.

The shipyard is very conveniently located for the hauling out as well as the construction and repairing of vessels.

Since 1910, the entire machinery of two dredges has been built, as well as the hull and machinery of a floating derrick, a tug and eight large flat scows.

The usual maintenance and repairs to the commissioners' fleet were well and economically carried out during the year.

YARD AND LOCOMOTIVE WORKS.

The large amount of construction work, maintenance and repairs on the harbour and the housing and care of the commissioners' locomotives required a conveniently located and properly equipped yard and locomotive house.



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Two years ago a site was chosen between the harbour railway tracks and Notre Dame street opposite Davidson street, or at section 42 on the harbour.

Reinforced concrete buildings were constructed for the locomotive house, the machine shops and stores.

The locomotive house, connected up with the harbour railways, has a capacity for six locomotives, with complete coal handling plant, water tank and repairing equipment.

The shop is designed and equipped for machine work, carpenter work and the necessary machines are installed for the various requirements of repairs, maintenance and construction.

## GENERAL.

*Wharf accommodation.*—The extent of the wharves at the end of the season is as follows:—

For 30 feet draught and over.. . . .	20,379 lin. feet or	3·859 miles.
For 25 to 27½ feet.. . . .	13,869 lin. feet or	2·627 miles.
<hr/>		
Total deep draught.. . . .	34,248 lin. feet or	6·486 miles.
For 20 feet and under.. . . .	3,159 lin. feet or	0·666 miles.
<hr/>		
Total wharfage end of 1913.. . . .	37,407 lin. feet or	7·152 miles.

*Extent of harbour railway tracks.*—The extent of the harbour commissioners' railway tracks at the end of 1913 is as follows:—

1. South of Lachine canal, Bickerdike Pier, Windmill Point wharf and west.. . .	24,688 lin. feet or	4·6760 miles.
Montreal and Southern Counties Railway	425 lin. feet or	0·0805 miles.
<hr/>		
Total south of canal.. . . .	25,113 lin. feet or	4·7565 miles.
2. Sections 12 to 46, High level, main line track.. . . .	48,548 lin. feet or	9·1947 miles.
<hr/>		
To piers, elevators, cross-overs and sidings, etc.. . . .	69,800 lin. feet or	13·219 miles.
Sections 35 to 46, Low level main line track.. . . .	12,150 lin. feet or	2·303 miles.
Sections 46 to 62, High level, main line track.. . . .	9,125 lin. feet or	1·7282 miles.
<hr/>		
3. To wharves, industries, etc.. . . .	19,523 lin. feet or	3·6464 miles.
<hr/>		
4. Guard pier.. . . .	10,400 lin. feet or	1·9696 miles.
5. South shore, St. Lambert.. . . .	2,300 lin. feet or	0·4356 miles.
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Grand total tracks on harbour in use in 1913. 196,959 lin. feet or 37·3042 miles.

*Labour.*—The following table shows the maximum and average number of workmen employed directly by the harbour commissioners during the season of 1913:—

	Maximum.	Average.
Construction of wharves, etc.. . . . .	813	610
Maintenance, cleaning, removing ice, etc.. . . . .	270	58
Harbour yard, carpenters, blacksmiths, etc.. . . . .	28	25
Sawmill and timber room, sawyers and handymen.. . . .	33	26
Machine shop, machinists, blacksmiths, etc.. . . . .	100	74
Shipyard, carpenters, labourers, etc.. . . . .	103	85
Dredging fleet, crews of dredges, tugs, etc.. . . . .	320	297
Grain elevators, foreman and operators.. . . .	84	76
Floating elevators, foreman and operators.. . . .	23	22
Shed repairs and maintenance.. . . .	23	10
<hr/>		
	1,797	1,283



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## THE SEASON OF NAVIGATION.

The season of navigation opened in the harbour on April 11 by the tug *Sir Hugh Allan*. The first arrival from sea was the ss. *Sokoto*, which reached the port on April 21, and the last departure for the sea was the ss. *Ruthenia*, which sailed on November 28. At the end of the year, December 31, the river was still open.

## FINANCIAL OPERATIONS.

From the summarized statement of operations, hereto annexed, it will be seen that the total amount received on revenue account for the year 1913 was \$1,361,964.06, being an increase of \$312,652.56 over the previous year, the larger portion of which increase is attributable to the operating of grain elevator No. 2.

The disbursements on revenue account were \$1,325,636.36, of which \$706,675.39 was for interest, being an increase of \$216,831.41 over the previous year.

There was received from the Government on loan \$1,940,000 under the Act 2, George V., chap. 36, on account of expenditure on capital account, and also the sum of \$200,000 to retire debentures, series 'B' held by the public.

The disbursements on capital account were \$2,461,794.62. The principal works of improvement carried out are as follows:—

Harbour dredging.. . . .	\$ 252,742 61
Real estate.. . . .	99,671 35
Wharves, piers and basins.. . . .	779,752 80
Plant.. . . .	90,544 09
Shops and buildings.. . . .	14,924 12
Railways.. . . .	118,007 53
Permanent sheds.. . . .	190,100 70
Electric hoists, etc.. . . .	31,213 49
Grain elevators.. . . .	884,837 93

The debenture debt of the corporation on the 31st December, 1913, was \$21,522,000, of which \$1,672,000 is to the public, and \$19,850,000 to the Dominion Government. The average rate of interest on these debentures is 3.344 per cent.

## DEPARTMENTAL STAFFS.

In terminating this report, the commissioners desire to express their appreciation of the loyal services rendered by the staffs of the different departments during the past year.

W. G. ROSS, *President*,

FARQUHAR ROBERTSON,

LIEUT.-COL. A. E. LABELLE,

*Harbour Commissioners.*



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STATEMENT showing the Classification of Transatlantic Vessels that arrived in Port of Montreal during the past Ten Years.

Year.	Steam-ship No.	Tonnage.	Barques No.	Tonnage.	Ships and Brigs No.	Tonnage.	Schooners No.	Tonnage.	Grand Total Vessels.	Tonnage.
1904	408	1,267,088	3	1,144	1	318	5	2,090	417	1,270,640
1905	422	1,357,517	3	2,324	..	..	17	14,988	442	1,134,829
1906	420	1,372,879	3	1,872	..	..	16	6,084	439	1,380,833
1907	381	1,339,014	..	....	..	..	..	....	381	1,339,914
1908	364	1,315,688	..	....	..	..	..	....	364	1,315,688
1909	371	1,436,963	..	....	..	..	..	....	371	1,436,963
1910	410	1,656,794	..	....	1	1,620	..	....	411	1,638,414
1911	401	1,695,613	..	....	..	..	..	....	401	1,695,613
1912	409	1,775,487	..	....	..	..	..	....	409	1,775,487
1913	477	2,020,333	..	....	..	..	..	....	477	2,020,333

COMBINED STATEMENT showing the Number and Tonnage of all Vessels that arrived in Port of Montreal during the past Ten Years.

Year.	Trans-Atlantic.		Maritime Provinces.		Inland.		Grand Total.	
	Vessels.	Tonnage.	Vessels.	Tonnage.	Vessels.	Tonnage.	Vessels.	Tonnage.
1904. ....	417	1,270,640	379	586,057	10,063	2,354,975	10,859	4,211,672
1905. ....	442	1,354,829	391	585,227	11,112	2,788,551	11,945	4,725,607
1906. ....	439	1,380,835	381	592,388	12,557	3,095,174	13,377	5,068,395
1907. ....	381	1,339,014	361	586,972	14,420	3,620,150	15,161	5,546,936
1908. ....	364	1,315,688	375	642,916	12,434	3,589,124	13,173	5,548,628
1909. ....	371	1,436,963	299	474,450	10,991	3,146,494	11,661	5,057,907
1910. ....	411	1,658,414	336	574,808	13,636	4,327,799	14,383	6,561,021
1911. ....	401	1,695,613	361	642,639	11,670	4,275,019	12,432	6,613,271
1912. ....	409	1,775,487	327	628,437	12,586	4,649,767	13,322	7,053,691
1913. ....	477	2,020,333	343	670,202	13,426	5,703,467	14,246	8,394,002



5 GEORGE V., A. 1915

STATEMENT showing the Classification of Vessels that arrived in Port of Montreal for the last Ten Years, from the Lower St. Lawrence and Maritime Provinces.

Year.	Steamships.		Schooners.		Grand Total.	
	No.	Tonnage.	No.	Tonnage.	No.	Tonnage.
1904.....	366	582,819	13	3,238	379	586,057
1905.....	364	580,485	26	4,116	391	585,127
1906.....	367	588,980	14	3,408	381	592,388
1907.....	343	579,930	18	7,042	361	586,972
1908.....	350	640,244	25	2,672	375	642,916
1909.....	273	470,936	26	3,514	299	474,450
1910.....	306	572,022	30	2,786	336	574,808
1911.....	330	639,752	31	2,887	361	642,639
1912.....	292	625,099	35	3,338	327	628,457
1913.....	299	666,053	44	4,149	343	670,202

STATEMENT showing the Nationalities and Tonnage of sea-going Vessels that arrived in the Port of Montreal, during the season of 1913, that were navigated by 73,260 seamen.

Nationalty.	Number of Vessels.	Tonnage.
British.....	736	2,469,858
Norwegian.....	54	113,283
German.....	15	47,483
Dutch.....	4	12,094
Austrian.....	4	25,046
French.....	3	11,147
Danish.....	3	4,103
Belgian.....	1	7,521
Total.....	820	2,690,535

Of the above, 776 were of iron or steel with tonnage of 2,686,386 tons, and 44 were built of wood with a tonnage of 4,149 tons.



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STATEMENT showing the dates of the Opening and Closing of Navigation, the First Arrival and the last Departure for sea, also the Greatest Number of Vessels in the Port of Montreal at one time, during the past Ten Years.

Years.	Opening of Navigation.	Closing of Navigation.	First Arrival from Sea.	Last Departure for Sea.	Greatest Number of Vessels in Port at one time.			
					Sea-going.		Inland.	
					No.	Date.	No.	Date.
1904.....	April 25....	Dec. 9....	May 4....	Nov. 27....	23	Sept. 10....	180	July 13
1905.....	" 19 ...	" 12 ...	" 2....	" 30....	27	Oct. 4. . .	175	June 19
1906.....	" 20....	" 2....	April 28....	Dec. 2....	26	May 28....	124	July 8
1907.....	" 23....	" 15....	May 2....	Nov. 29....	29	" 24....	103	" 8
1908.. ..	" 22. . .	" 10....	April 30....	" 26....	24	June 21....	104	June 30
1909.....	" 16 ...	" 27....	" 23....	" 28 ..	22	Nov. 9....	107	Aug. 31
1910.....	" 1....	" 7....	" 11....	Dec. 1....	25	May 18....	122	Sept. 18
1911.....	" 23....	" 29....	" 26....	" 3....	24	Aug. 18....	85	June 5
1912.....	" 23....	" 21....	" 30....	" 3 ...	22	July 31....	86	Aug. 21
1913.....	" 9....	" 27....	" 19....	Nov. 29....	29	Oct. 3....	92	July 25



SUMMARIZED STATEMENT of Operations for the Year ended December 31, 1913.

Items.	Totals.	Grand Totals.	Items.	Totals.	Grand Totals.
Receipts on Revenue Account.	\$ cts.	\$ cts.	Disbursements on Revenue Account.	\$ cts.	\$ cts.
Collector of Customs :			Grain elevator No. 1, wages, power, etc. . . . .	69,464 99	
Wharfage dues on imports . . . . .	269,459 33		Grain elevator No. 2, wages, power, etc. . . . .	85,576 46	
Wharfage dues on exports . . . . .	121,663 53		Conveyor Galleries, wages. . . . .	18,747 20	
			Floating elevators, wages and maintenance. . . . .	34,286 92	
Local wharfage and additional charges . . . . .		391,158 86	Harbour sheds, insurance, and maintenance, etc. . . . .	14,504 68	
Grain elevator No. 1, elevating charges, etc. . . . .	141,213 53	135,699 48	Electric hoists, operation and repairs . . . . .	2,825 30	
Grain elevator No. 2, elevating charges, etc. . . . .	228,564 91		Harbour repairs, harbour tracks and traffic dept. . . . .	199,393 53	
Floating elevators, elevating charges, etc. . . . .	58,683 77		Floating Crane, operation and maintenance. . . . .	5,535 12	
			(The above expenditures do not include charges for interest, administration, depreciation, rental of tracks, space, &c.)		
Total elevator revenue. . . . .		428,462 21	Reconstruction of Jacques Cartier pier. . . . .	13,551 74	
Rental of harbour sheds. . . . .		140,500 00	Harbour lighting. . . . .	11,322 08	
Rental of electrical hoists . . . . .		3,520 40	Harbour surveys and borings . . . . .	3,407 32	
Traffic department, switching railway cars, etc. . . . .		206,701 76	Harbour surveys and borings . . . . .	376 36	
Floating crane charges. . . . .		5,803 50	Buoys and beacons. . . . .	7,791 58	
Rental of wharves. . . . .	26,075 00		Maintenance dredging. . . . .	151,577 69	
Rental of land. . . . .	5,934 33		Salaries, commissioners and staff, miscellaneous ex-	600 00	
Rental of tracks. . . . .	8,264 23		penses, legal and notarial, police, etc. . . . .		
			Annuity, Mrs. John Young. . . . .		
Total rentals . . . . .		40,273 56			
Sundry revenue . . . . .		9,844 29	Interest on debentures, overdrafts, etc. . . . .	618,960 97	
Receipts on revenue account, total . . . . .		1,361,964 06	Disbursements on revenue account. . . . .	706,675 39	1,325,636 36
Receipts on Capital Account.			Disbursements on Capital Account.		
Dominion Government, under Act 2, George V., Chap. 36. . . . .		2,140,000 00	Dredging ship channel in harbour . . . \$	14,131 25	
			Altering lower end guard pier. . . . .	12,039 50	
Total Receipts. . . . .		3,501,964 06	Widening inside guard pier. . . . .	67,487 00	
Security deposits received from contractors . . . . .		7,431 25	Channel south of St. Helen's Island. . . . .	99,311 50	
Balance from summarized statement, 1912. . . . .		466,505 49	Moffatt's island removal. . . . .	29,498 36	
Overdraft at Bank of Montreal, Dec. 31, 1913. . . . .	423,073 28		Dredging between Ile Verte and		
Less overdraft December 31, 1912. . . . .	114,170 20	308,903 08	Guard Pier. . . . .	30,275 00	
			Harbour dredging, total. . . . .	252,742 61	
(The above overdraft is for capital expenditure for which advances had been applied from Dominion Government, but not received in 1913.) . . . . .			Property Hochelaga ward. . . . .	99,671 35	
			Real estate, total. . . . .	99,671 35	



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Old items charged to construction in 1910, 1911 and 1912, transferred in 1913 to plant account :—			
Grain elevator No. 2, Part 1 .....	10,000 00	Victoria pier and market basin wharves	127,538 38
Extension of railway tracks.....	25,000 00	Victorsa pier footbridge.....	370 13
Victoria pier and market basin. ....	56,865 46	High Level shore wharves, sec. 25 to 30.	182,607 63
Dredging and filling in general. ....	20,426 98	Improvements, eastern section, floating dock site.....	299,158 34
Floating dock site, eastern section.....	51,963 52	Pointe aux Trembles wharf .....	94,365 43
		Racine pier.....	365 81
		Windmill Point embankment.....	2,125 37
		Paving wharves.....	73,221 71
Transferred to plant account.....	164,255 96		779,752 80
Victoria pier shed No. 16, conveyor structure transferred elevator No. 2.....	23,400 00	Wharves, piers and basins, total.....	
		Sundry plant .....	12,959 53
		Flat deck scows .....	14,345 19
		Dredge No. 6.....	1,089 86
		Derrick No. 7.....	17,099 51
		Gilbert dredging and blasting plant ..	45,050 00
Total amount transferred, see contra for debit. ..		Plant, total.....	90,544 09
		New Harbour yard and engine house..	12,022 52
		Berri street office.....	2,901 60
		Shops and buildings, total.....	14,924 12
		Harbour railways and sidings.....	32,859 13
		New high level tracks, above winter level.....	74,978 55
		Aylwin street subway, under tracks ..	10,169 85
		Railways, total.....	118,007 53
		Permanent shed, No. 16, Victoria pier	21,102 53
		Permanent sheds, Tarte pier .....	79,951 82
		Permanent sheds, section 24 and 25...	89,046 35
		Permanent sheds, total.....	190,100 70
		Hoist and bridge sheds 3 and 4.....	28,392 34
		Bridge for hoists, sheds 3 and 2.....	1,723 63
		New electric circuit .....	1,097 52
		Electric hoists. &c , total.....	31,213 49
		Elevator No. 1, Addition.....	653,566 29
		Elevator No. 2, construction, Part II.	219,250 33
		Elevator No. 2, quay wall Part I. ....	2,150 30
		Elevator No. 2, railway tracks, Part I	9,871 01
		Grain elevators, total .....	884,837 93
		Disbursements on Capital.....	2,461,794 62
		Grand total disbursements.....	3,787,430 98
		Old items of capital expenditure, transferred 1913, (see contra for credit):—	
		Plant account in 1910, 1911 and 1912.....	164,255 96



SUMMARIZED STATEMENT of Operations for the Year ended December 31, 1913.—*Concluded.*

Items.	Totals.	Grand Totals.	Items.	Totals.	Grand Totals.
Receipts on Capital Account.	\$ cts.	\$ cts.	Disbursements on Capital Account.	\$ cts.	\$ cts.
			Grain elevator No. 2, Part II., conveyors. ....	23,400 00	187,655 96
			Debentures, series B., due July 5, 1913, retired. ....	.....	200,000 00
					4,175,086 94
			Deduct, payable on December 31, 1913 : Dominion Government, interest. ....	314,349 67	
			Coupons outstanding. ....	260 00	
			Accounts payable and outstanding. ....	292,697 73	
				607,307 40	
			Less, outstandings, December 31, 1912. ....	487,848 79	119,458 61
					4,055,628 33
			Security deposits returned to contractors. ....	.....	11,563 63
			Balance at 31st December, 1913 :— Cash on hand. ....	4,008 09	
			Bank of Montreal, coupon account. ....	360 00	
			Accounts receivable. ....	177,614 77	
			Materials in stock. ....	223,285 02	405,267 88
		4,172,459 62			4,472,459 84

Certified :  
GEORGE SMART,  
Comptroller.

Certified :  
DAVID SEATH,  
Secretary-Treasurer.

Verified :  
RIDDELL, STEAD, GRAHAM & HUTCHISON, C.A.,  
Auditors.



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QUEBEC HARBOUR COMMISSION, FOR THE YEAR 1913.

QUEBEC, January 2, 1914.

To the Honourable J. D. HAZEN,  
Minister of Marine and Fisheries,  
Ottawa.

SIR,—In compliance with the requirements of the Act 62-63 Victoria, chapter 34, section 46 (the Quebec Harbour Commissioners' Act, 1899) I have the honour to submit the following report on the operations of the Quebec Harbour Commissioners for the year 1913.

CHIEF ENGINEER'S REPORT.

The annexed report from the chief engineer, Mr. St. Geo Boswell, conveys information regarding all matters coming under his care in connection with the harbour works in general, and the various additions, alterations, and reparations made to them, and the minor works executed during the year on the properties of the commissioners.

WHARFINGER'S REPORT.

The annexed report from the wharfinger, Mr. P. Flynn, gives the usual information regarding the number of vessels using the Louise docks, the goods landed or shipped on the wharves, and the railway traffic over the commissioners' property during the year 1913.

HARBOUR MASTER'S REPORT.

The annexed report from the harbour master, Mr. J. C. Sullivan, contains the usual data concerning the opening and closing of navigation, the formation of ice, and the routine work of his department.

The leases of the following tenants have been renewed for one year, all subject to cancellation after three months' notice, if any of the properties leased are required for harbour improvements: Canadian Import Company, 200 feet frontage in the inner basin; Quebec Railway Light, Heat and Power Company, wood yards on the embankment; Messrs. Lachance and Frère, coal yard on the embankment; Mr. Miles Lonergan, coal space on the embankment.

An agreement was entered into with the Grand Trunk Railway system and the Intercolonial Railway of Canada, whereby the commissioners have leased jointly to these companies an area of land comprising all the space included between Prince of Wales, St. Andrew, and St. James streets, and the river front. On this space, a large fireproof freight shed was erected, and several railway tracks laid for the accommodation of the railway companies.

REVENUE AND EXPENDITURE.

The revenue of the commissioners for the year 1913 was \$232,334.73, or an increase over the preceding year of \$106,203.34, and the expenditure chargeable to revenue amounted to \$229,307.90, leaving a surplus over the working expenditure for the year, of \$3,026.83.

EXPENDITURE ON CAPITAL ACCOUNT.

The expenditure on capital account during the year, out of the approved estimates by your department, under the "Quebec Harbour Advances Act, 1913" (3-4 George V, chapter 41), has been \$2,612,909.87, the details of which will be found in a tabulated statement annexed to this report.



5 GEORGE V., A. 1915

The general expenditure on capital account, out of the available moneys at the disposal of the commissioners, was \$230,243.71. A detailed statement of this expenditure is attached to this report.

The total expenditure on capital account during the year 1913 was \$2,843,153.58.

#### HANDLING OF RAILWAY CARS.

The commissioners have taken charge on the 1st of July, 1913, of the railway traffic on their properties, and have had in commission for this service three powerful switching locomotives. I am pleased to report that this service has proved a great improvement over the system prevailing, when all railways having access to Quebec were allowed to switch their own cars on the commissioners' docks and wharves.

The commissioners have had paragraph "C" of sub-section 2, of section 22 of their Act amended, so as to define more clearly their powers for operating switching locomotives, and carrying goods by any motive power to and from, or between the railways connecting with the harbour tracks and the harbour lines.

#### REVISION OF BY-LAWS.

The commissioners have revised and consolidated all their by-laws during the year, and have included, in this revision, regulations and tariffs for the hauling of railway cars, for the use of their floating crane, and for the handling of grain in their new grain elevator, which is to be in readiness to receive grain on the 15th of May.

#### ICE-CUTTING.

During the winter of 1912-13, 103,062 blocks of ice have been cut for local use.

Care has been taken that all the ice that is cut for domestic purposes is perfectly pure, and taken in localities in the harbour that have been selected after an analysis of the ice had been made.

To this report are annexed the various statements giving the information yearly forwarded to your department in connection with the harbour, and also a complete statement of the commissioners' accounts for the year.

I have the honour to be, sir,

Your most obedient servant,

RAOUL RENAULT,

*Secretary-Treasurer.*



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REVENUE.			EXPENDITURE.		
1913.	\$	cts.	1913.	\$	cts.
Dec. 31 To Harbour dues....	\$	3,981 94	Dec. 31 By Administrating, engineering		
" Tonnage dues ...		11,923 20	staff, salaries and fees....	30,305	57
" Export dues.....		2,784 81	" Legal expenditure.....	1,935	28
" Import dues.....		6,967 89	" Notarial expenditure.....	190	88
		25,657 84	" Miscellaneous expenses,		
" Beach and deep water lots..		1,111 97	printing, stationery, ad-		
" Earnings, docks, wharfs			vertising, harbour master		
and buildings.....	199,603	21	service, general labour, etc	10,687	09
" Interest. . . . .		2,101 21	" Property expenditure, taxes,		
" Fines and penalties .....		3,763 00	insurance, repairs, etc.,		
" Sundries .....		97 50	and the maintenance of		
			docks, wharfs and stores	140,189	08
			" Twelve months' interest on		
			bonds, 62-63 Victoria,		
			chap. 34, and 6-7 Edward		
			VII, chap. 36.....	46,000	00
			" Surplus over the working		
			expenses.....	3,026	83
				232,334	73
		\$232,334 73			

RAOUL RENAULT,  
*Secretary-Treasurer.*

QUEBEC HARBOUR COMMISSIONERS' OFFICE,  
QUEBEC, January 2, 1914.







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The arrears of interest due to the Finance Department on the old debentures, or by the Dominion Government on outstanding claims are not included in this statement.

QUEBEC HARBOUR COMMISSIONERS' OFFICE,  
QUEBEC, January 2, 1914.

RAOUL RENAULT,

*Secretary-Treasurer.*

We hereby certify that we have examined the statement of assets and liabilities of the Quebec Harbour Commissioners, and that we find the same in all particulars the true position of the trust to December 31, 1913, as per books and vouchers.

QUEBEC, February 13, 1914.

J. A. LARUE, }  
RAULIN AMY, } *Auditors.*



5 GEORGE V., A. 1915

## HARBOUR COMMISSIONERS OF QUEBEC,

ENGINEER'S OFFICE,

QUEBEC, January 2, 1914.

RAOUL RENAULT, Esq.,  
Secretary-Treasurer,  
Harbour Commission.

SIR,—I have the honour to submit the following, with reference to the various works in connection with the maintenance and improvement of the harbour accommodation, carried out by this department during the past year:—

## PRINCESS LOUISE EMBANKMENT.

*Bulkhead Wall.*—The construction of the bulkhead wall along the northern face of the Princess Louise embankment, as recommended by Messrs. Coode, Matthews, Fitzmaurice & Wilson in their report of January 21, 1913, having been decided upon by the commission, arrangements were made for beginning this work on the opening of navigation in the spring. For this purpose the timber required, consisting of southern pine and spruce, was purchased during the winter; a site at Indian cove was secured for use as a service ground, for the construction of the cribwork foundations; and a quarry site secured at St. Nicholas on the south side of the St. Lawrence, where the stone required for construction purposes was obtained.

## INDIAN COVE.

At this site the "Long wharf," some 1,820 feet in length, has been repaired to suit requirements; a saw-mill, with compressor plant has been erected; launching ways have been laid down, tracks have been placed on the wharf for the use of the travelling derricks and for the transportation of timber; booms have been repaired and constructed; the building known as the "salt shed" has been re-roofed with galvanized iron, and generally made wind and water-tight; the office building has been put into serviceable condition; a forge has been erected; a stairway leading from the main highway constructed, and electric lights placed in the mill and office building; two travelling derricks have been constructed and placed on the wharf for handling crib timbers, and the necessary boring tools for use in the construction of the cribwork have been secured.

## QUARRY PROPERTY.

This property was developed during the early summer. For this purpose a wharf 160 feet long and 20 feet wide was constructed and grounding berths prepared along the northeast and southwest sides of the wharf, suitable for the grounding of deck scows; a boiler and engine-house, a store, an office, and a lodging-house were erected, a compressor plant installed, a locomotive crane placed on a track, laid down on the wharf for the purpose, and some 2,000 lineal feet of tracks for dump cars laid down to the quarry face.

A contract was also given to the Union Sand Company for the transportation of stone from quarry wharf to the site of the works under construction, by the commission.

*Bulkhead Construction.*—In connection with the construction of the work, a contract for dredging in the estuary of the river St. Charles was awarded by the commission, to the Dominion Dredging Company, which company has, during the past season, removed 2,986,700 cubic yards of material.



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In the trench excavated by the above company for the purpose, five of the foundation cribwork blocks, for the bulkhead wall have been sunk in position and filled with stone, making a length of foundation-work of 820 feet ready for the superstructure next spring. These foundation-blocks are founded at a depth of 40 feet below low water. In addition to the cribwork blocks placed in position, three others have been partially completed, one up to a height of 30 feet, one to a height of 13 feet, and one to 6 feet in height. A considerable quantity of the dredged material has been deposited as filling between the bulkhead wall and the present Louise embankment.

For the purpose of continuing the dredging operations, in connection with this work, next season, the commissioners have purchased two powerful dredges, six dump scows, three with a capacity of 500 cubic yards, and three with a capacity of 300 cubic yards, also one tow boat of some 900 indicated horse-power. Of the two dredges the "Fruhling suction dredge" has been delivered, and worked in the harbour for fourteen days, from November 5 to November 20, after which date she was made ready to proceed to St. John, N.B., for which port she left on November 28, arriving at St. John under her own steam on December 5.

The second dredge is to be of the ladder bucket type, with a capacity of 1,000 cubic yards per hour, and is now under construction by Messrs. Wm. Simmons & Co., of Renfrew, Scotland, for delivery early next season.

GRAIN ELEVATOR.

On the 18th of February last a contract was entered into with the Canadian Stewart Company for the construction of a 1,000,000-bushel fireproof grain elevator to be located on the Louise embankment, with a marine tower for loading or unloading vessels in the wet dock, a conveyor gallery system for serving the various berths in the Louise dock, and a dryer-house for restoring damaged grain. Provision has been made for increasing the capacity of this elevator by an additional 1,000,000 bushels.

The actual work of construction on this building was begun during the latter part of the month of April, and has since progressed in a very satisfactory manner. The workhouse, the storage-house, power-house and dryer are now practically completed, with the exception of the installing of the machinery, and minor interior work. The foundations for the marine tower have been completed, and the superstructure is now well advanced.

In connection with this elevator, a self-contained floating grain elevator, with a capacity of 30,000 bushels has been purchased for the purpose of serving vessels that cannot be reached by the conveyor galleries.

*Louise Embankment—General Work and Repairs.*—A transfer yard has been laid down at the western end of the embankment, where cars are delivered to and received from the various railway companies.

The landing shed No. 18 on the breakwater has been extended 420 feet, the total length of this shed now being 744 feet.

The baggage shed No. 24, removed from the breakwater to make room for the extension of shed No. 18, has been converted into a small machine shop, and has been fitted up with tools, and operated as such during the past summer. A locomotive shed has been placed at the northern side of this shop, where the three locomotives owned by the commission can be taken care of.

A new two-story carpenter shop is now in course of construction in the vicinity of the above buildings.

Two large fixed fenders have been secured to the northeast and northwest corners of pier No. 1, in order to protect vessels when rounding the northern end of this pier, for the purpose of berthing at the western face of this pier, or at the bulkhead wall now under construction.



5 GEORGE V.; A. 1915

To make room for the new grain elevator, one-half of the shed No. 22 had to be removed. This half was re-erected on the completed part of the bulkhead wall, and is now occupied as the commissioners' store.

Three deck scows of the following dimensions, viz., one 75 by 36, and two 57 by 29 feet were constructed during the early summer. These scows have been made use of for the transportation of materials between the docks, Indian cove, Lampson cove, and the quarry. In addition to the above, the following plant has been secured for general use: Three locomotives, three locomotive frames, one barge, the *Daves*, one motor-boat, the *Gossoon*, one dredge—the *Fruhling Suction dredge*.

Under construction but not delivered: Floating 50-ton crane, barge for crane, floating crane elevator, ladder bucket dredge, six steel dump scows, one tow boat, ten deck scows.

A contract for the supply of the crane barge on the above list has been awarded to Sir Wm. Arrol & Company. A contract for the six dump scows to the Polson Iron Works.

For the ladder dredge, to Wm. Simmons & Co., of Renfrew, Scotland. For the floating grain elevator and the tow boat to Smith's Dock Company, Limited, of Middlesborough, England.

The ten deck scows on the above list are now under construction departmentally.

The motor-boat *Gossoon* which was seriously damaged by fire late in the season, is now being reconstructed at the commission's workshops.

Six floating fenders, 7 feet in diameter, have been constructed for use along the western face of pier No. 1.

One large and two small passenger and seven freight gangways have been built during the past season.

The planking in front of sheds Nos. 25 and 27 has been renewed, and filling supplied where required.

*Car Ferry Terminals.*—All the old buildings, consisting of Nos. 4, 5, 7, 8, and G. T. Railway sheds and offices on the site of these terminals have been demolished, the ground levelled up, the Wellington and East India wharves repaired, some 7,000 lineal feet of track laid down, and two structural steel and concrete freight sheds erected. The Grand Trunk and Intercolonial Railway companies moved into the new buildings on October 27 last.

*New Office Building.*—The foundations, concrete basement, drainage and water for this building were put in during the past winter by days' work, the remainder of the building from street level up was given out by contract. The walls, roof, floors and interior partitions are now completed, with the exception of the plastering and the copper sheathing of roof.

The Department of the Interior has made use of the landing shed No. 27 during the past season, for the accommodation of the immigration service.

*Fly bank.*—To retain the filling materials taken from the St. Charles river dredging, a retaining wall of cribwork 1,400 feet in length, founded in 20 feet of water at low tide, has been constructed at Lampson cove, and 798,000 cubic yards of material deposited in this locality.

Two new coal-discharging towers have been installed on the wet dock quay wall of the embankment, by the Nova Scotia Steel & Coal Company.

On July 1 last, the operation of the commissioners' railway lines was taken over by the traffic department.

The cross wall draw-bridge was operated for the first time, the past season, on April 5, and for the last time on December 15.

The water was retained in the wet dock for the first time of the season on April 19, and for the last time on December 6.

ST. GEORGE BOSWELL,

*Chief Engineer and General Superintendent.*



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QUEBEC, February 1, 1914.

RAOUL RENAULT, Esq.,  
Secretary-Treasurer,  
Quebec Harbour Commissioners,  
Quebec.

SIR,—I have the honour to submit the following with reference to the traffic of the St. Charles docks and wharves, showing the number of vessels, their registered tonnage, amount and description of cargo landed and shipped from the docks during season 1913.

Inwards, 413 vessels, 1,997,111 tons register: 80,388 tons general cargo, 6,782 tons salt, 7,441 tons bricks, 560 tons cement, 2,378 tons slag, 214 tons drain pipes, 610 tons earthenware, 3,214 tons salt cake, 283,486 tons bituminous coal, 51,390 tons anthracite coal, 304 tons coke, total 434,867 tons.

Outwards, 135 vessels, 596,743 tons register: 24,023 tons general cargo, 1,045 tons asbestos, 17,145 tons pulp, 733 tons cardboard, 23,327 pieces of lumber, 6,052 loads of lumber. Total, 72,325.

Lower port steamers: landed 1,090 tons general, 3,350 tons pulp; shipped 5,172 tons general.

Grain landed.—

	Bushels.
Oats.. . . . .	801,024
Corn.. . . . .	187,963
Barley.. . . . .	4,700
Wheat.. . . . .	10,500

Pulpwood shipped.—7,500 cords.

During past season the different mail steamers landed:—

First-class passengers . . . . .	10,214
Second-class passengers.. . . .	58,425
Third-class passengers.. . . .	157,152
Total . . . . .	225,791

The second and third-class passengers were forwarded to their future homes by the different railway companies.

VESSELS DAMAGED AND USING THE DOCKS.

SS. *Lady of Gaspé* collided with ss. *Crown of Cordova* off Three Rivers, and received such heavy damage that she had to be beached. After having been floated she came into the Louise docks, discharged her cargo of damaged food, etc., which was sold by auction. After landing cargo, went over to Lévis, where she was repaired.

SS. *Whakatane*, having run into the wharf at Indian Cove, and having received considerable damage, came up to Louise docks, where she discharged part of her cargo. Went into the dry dock for repairs. After being repaired, reshipped her cargo and proceeded to Montreal.

During the year, spaces were rented at low rates for storage of coal landed which had to be removed from water front.

The Dominion Coal Company have 9,000 tons coal stored on the space rented to them.

The Nova Scotia Steel and Coal Company have 22,000 tons coal stored on the space rented to them.



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There are wintering in Louise docks, lumber, coal, railway ties, etc.

There are stored in the different freight sheds: salt, slag, pulp, etc.

The docks are occupied during the winter months by a large number of vessels of various tonnages, where they find safe quarters until the opening of navigation.

I have the honour to be, sir,

Your obedient servant,

P. FLYNN,

Wharfinger.

QUEBEC, January 3, 1914.

RAOUL RENAULT, Esq.,  
Secretary-Treasurer, Harbour Commission,  
Quebec.

SIR,—I have the honour to submit the following with reference to harbour for the year 1913.

Navigation was open in the harbour all winter, the ferry boats crossing the river and the Canadian Government steamers *Montcalm* and *Lady Grey* in commission.

The ice formed at Cap Rouge on the 13th January at 6 a.m., and broke away at 9 p.m. the same day.

The ice bridge between the island of Orleans and the mainland formed on the 14th of January.

Canadian Government ss. *Montcalm* left the harbour for lower St. Lawrence at 7 a.m. on the 14th January, with passengers, etc., and returned on the 22nd January.

Ice bridge formed at Cap Rouge on the 9th of February at 2 p.m. and broke away the same evening.

Canadian government ss. *Montcalm* left the harbour on the 1st March, with passengers, etc., for lower St. Lawrence, and returned on the 6th.

Canadian government ss. *Montcalm* left the harbour on the 18th March, working up the river toward Three Rivers.

SS. *Natashquan* entered loading berth, Louise basin on the 26th March.

SS. *Natashquan* left the harbour for lower St. Lawrence with passengers and freight on 1st April.

Ice broke up in tidal basin on the 7th April.

Small sailing craft arrived in the harbour from lower St. Lawrence parishes on the 4th April.

Schooner *Florida* arrived from lower St. Lawrence on the 4th April.

Schooner *Caron* left the harbour with a full cargo of freight for lower St. Lawrence on the 8th of April.

SS. *Natashquan* arrived from lower St. Lawrence with passengers on the 10th April.

SS. *Wacousta*, first coal steamer from sea, arrived on 14th April.

Ice in wet dock and tidal basin clear on the 15th April.

Lake and batture ice passing down on the 17th April.

Tug *Sin Mac* arrived in the harbour from Montreal on the 17th of April.

The ice in the St. Charles and north channel broke away on the 18th April.

SS. *Wacousta* left the harbour on the 18th of April for Montreal.

SS. *Sokoto*, with passengers and freight, arrived in the harbour on the 20th April.

Pontoons were placed in the harbour on the 23rd April.

Canada Steamship Lines, Ltd., ss. *Saguenay* arrived from Montreal on the 23rd of April and returned the same evening.

Canada Steamship Lines, Ltd., ss. *Tadousac* left for Murray Bay on the 25th April.



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SS. *Teutonic*, first Royal Mail passenger steamer from Europe, arrived in the harbour on the 26th April.

French warship *Descarte* arrived inwards on the 18th of July and passed outwards on the 20th instant.

July 27, ss. *Lake Manitoba*, after being aground at the island of Orleans, moored at the breakwater and after survey proceeded to Montreal.

July 23, ss. *Lady of Gaspé*, after being in collision near Three Rivers, entered Louise basin, and after discharging cargo proceeded to dry-dock at Lévis for survey and repairs.

September 14, ss. *Wakatane*, New Zealand Steamship Company, grounded at Indian cove; after getting off she proceeded to Louise basin, discharged cargo and left for the dry-dock at Lévis for repairs, etc.

In addition to the routine work of the harbour and office, seven hundred and thirty ocean sea-going steamers have been berthed at Louise docks, breakwater, and Point-à-Carcy wharves.

One of the most important parts of the work of the harbour is the berthing of these vessels, which is done at night time as well as in the day.

The limits of the clear-water space (forbidden anchorage) where telephone and telegraph cables are laid across the river opposite the city are indicated by red lights at night and signboards in day time on both sides of the river. This space is 1,200 feet.

The last of the season, Canada Steamship Lines, Ltd., ss. *Tadousac* arrived from Murray bay on the 20th November.

Last Canada Steamship Lines, Ltd., ss. *Quebec* from Quebec to Montreal left on the 27th November.

Notices have been posted in suitable places warning parties from discharging rubbish of any kind into the harbour docks, etc., and every precaution is being taken to prevent any violation of the regulations of the commissioners in that respect.

SS. *Empress of Britain*, last Royal mail and passenger steamer left the harbour on the 27th November.

SS. *Ruthenia*, last passenger and freight steamer left the harbour for sea on the 30th November.

Propeller *Carleton*, with coal cargo, arrived in the harbour on the 2nd December, after discharging cargo left on the 3rd for Montreal.

Propeller *Calgary* arrived down with cargo of grain on the 1st of December.

SS. *Wacousta* left inner basin on the 1st December for sea.

The wet dock and tidal basin are now taken up with a large number of steamers and other craft for the winter, but space is reserved for any steamers that may come up during the early spring.

Several small steamers and other small craft have taken up their winter quarters at Indian cove.

Canadian Government ss. *Lady Grey* and *Montcalm* have taken their berths in the Louise basin and Point-à-Carcy wharf for their work during the winter.

Canadian Government ss. *Montmagny* left the harbour on the 13th of December for lower St. Lawrence and Halifax, with passengers.

Up to the time of writing the ice bridge between the island of Orleans and the mainland had not formed.

Canadian Government ss. *Champlain* entered Louise basin for the winter on December 30.

I have the honour to be, sir,

Your obedient servant,

JAS. C. SULLIVAN,

*Harbour Master.*



GENERAL EXPENDITURE on Capital Account.

Railway locomotives.. . . . .	\$ 37,114 04
Office furniture.. . . . .	849 60
Improvements E. I. and G. T. wharves.. . . . .	12,315 76
Locomotive shed.. . . . .	3,035 31
Machine shop.. . . . .	449 84
Indian cove improvements.. . . . .	1,348 80
Carpenter shop.. . . . .	4,299 61
Roadway pier No. 1.. . . . .	1,785 14
Protection fenders, pier No. 1.. . . . .	11,932 97
Shed No. 16.. . . . .	1,706 19
Shed No. 18.. . . . .	12,200 48
Shed No. 23.. . . . .	291 78
Shed No. 24.. . . . .	2,144 66
Deck scows.. . . . .	8,218 13
Indian cove property.. . . . .	117,901 67
St. Nicholas quarry.. . . . .	4,522 25
Sillery quarry.. . . . .	3,500 00
Scale.. . . . .	191 90
Railway bridge.. . . . .	3,660 00
Lumber.. . . . .	2,775 58
	<hr/>
	\$230,243 71

EXPENDITURE ON CAPITAL ACCOUNT on approved estimates out of the vote of Parliament under the "Quebec Harbour Advances Act, 1913."

Dredging.. . . . .	\$ 642,361 52
Quay extension, river St. Charles.. . . . .	749,013 33
Grain elevator.. . . . .	554,349 82
Car ferry terminals.. . . . .	116,380 75
Railway yard.. . . . .	10,276 80
Floating crane.. . . . .	24,174 15
Floating fenders.. . . . .	3,794 10
Office building.. . . . .	86,559 86
Dredging plant.. . . . .	278,839 10
Cribwork at "Fly Bank".. . . . .	92,150 71
Elevator dredge.. . . . .	19,009 73
Steel dump scows.. . . . .	36,000 00
	<hr/>
	\$2,612,909 87

COMPARATIVE STATEMENT of the Revenue of the Quebec Harbour Commissioners for the Years 1912 and 1913.

	1912.	1913.	Difference in 1913.
	\$ cts.	\$ cts.	\$ cts.
Tonnage dues.....	11,138 08	11,923 20	785 12 Increase.
Import dues.....	9,459 29	6,967 89	2,491 40 Decrease.
Export dues.....	4,160 46	2,784 81	1,375 65 Decrease.
Harbour dues .....	4,006 12	3,981 94	24 18 Decrease.
Earnings, docks, etc.....	88,757 12	199,603 21	110,846 09 Increase.
Beach and deep water lots.....	1,560 40	1,111 97	448 43 Decrease.
Interest.....	6,979 77	2,101 21	4,878 56 Decrease.
Sundries.. ..	70 15	97 50	27 35 Increase.
Fines and penalties.....		3,763 00	3,763 00 Increase.
	<hr/>	<hr/>	<hr/>
	126,131 39	232,334 73	106,203 34 Increase.

RAOUL RENAULT,  
*Secretary-Treasurer.*



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## REPORT OF THREE RIVERS HARBOUR COMMISSION.

THREE RIVERS, January 26, 1914.

The Hon. J. D. HAZEN,  
Minister of Marine and Fisheries,  
Ottawa.

SIR,—The Harbour Commissioners of Three Rivers have the honour to transmit to you their annual report, showing a statement of the vessels registered inward and outward of the port, a memorandum of the goods in and out, and a statement of receipts and disbursements for the year ending December 31, 1913.

As the report shows, the receipts for the year have exceeded the expenses by a sum of \$3,894.64, but the receipts compared with those of 1912 prove a decrease of \$3,103.05.

The causes of the decrease in the receipts are mainly in the difference of the importation of bituminous coal and pig iron.

On account of its inability to secure, as in previous years, its supply of coal from the Dominion Coal Company, which imported same through our harbour, the Laurentide Company of Grand Mere, had to get its supply by rail from the United States, the Dominion Coal Company importing, this year, only 89,652 tons instead of 121,155 tons, last year.

The Canada Iron Corporation, of this city, being in liquidation, has imported only 3,696 tons of pig iron, instead of 10,792 tons, last year.

There has been also a diminution of some 2,000 tons of sulphur and 3,000 tons of china clay.

The industrial firms using these products have probably on account of the bad condition of the monetary market—stored, for the winter, a smaller stock of the goods.

The provisions of the new provincial law has also caused a small decrease in the exportation of pulpwood to United States, but the increase in the inland (fluvial) traffic, covers the difference.

As the circumstances which have occasioned the reduction in the traffic and receipts were beyond the control of the harbour commission, your commissioners can only state the fact with regret.

The prospect for next year is very favourable.

There is reason to believe that most of the coal that is being used in this city and the surrounding towns will next year be brought through this harbour, and it is also expected that the importation of sulphur, china clay and pig iron will be considerably increased.

Your commissioners take occasion to express their anxiety over their inability to give some of the coal trade that is proposed to be directed to this port the accommodation it will need.

As you are no doubt aware, the Bureau wharf, where this additional trade is intended to be operated, is not so constructed as to allow the landing of heavy freight, and unless the wharf is reinforced, it is feared that the harbour commission may lose the trade.

The harbour commissioners, in a recent interview with the Honourable, the Minister of Public Works, have requested that the required reinforcing construction be performed to the wharf so as to enable the landing of some 50,000 tons of coal, which is proposed to be landed here if the necessary accommodation is given.

The additional trade would require the erection of a considerable coal-handling plant, which the wharf, as now, is not supposed to safely carry.



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The honourable minister has viewed favourably the project of reinforcing the wharf in question, and has referred your commissioners to Mr. Lafleur, the chief engineer, who it is understood, has the matter under study.

The commissioners have also represented to the Honourable the Minister of Public Works, that it is very urgent that the proposed shelter basin and construction of wharves, which the Government has planned and already undertaken, be continued so as to secure for this harbour a place of shelter for the vessels in time of storms.

The repeated accidents and loss of vessels and cargoes which occur every year for lack of protection, in time of storms, is causing great anxiety to the harbour commissioners, who beg to submit that it is of the greatest importance that the construction of said shelter basin be no longer delayed.

May the commissioners ask that your department take up the matter with the Department of Public Works, and ensure the execution of the works with as little delay as possible.

Respectfully submitted,

HENRI GODIN,

*Secretary, Harbour Commissioners of Three Rivers.*

STATEMENT of Number and Tonnage of Steamers and other Vessels, reported Inward and Outward of the Port of Three Rivers, for the Year 1913.

OCEAN TRAFFIC.—Return of Vessels Inward.			OCEAN TRAFFIC.—Return of Vessels Outward.		
Nationality.	No.	Tons.	Cleared For.	No.	Tons.
British.....	27	68,508	Inland ports.....	28	63,379
Norwegian.....	16	35,865	Great Britain . . . . .	15	40,994
	43	104,373		43	104,373
United States Traffic.			Inland Traffic.		
Steam barges.....	5	785	Boats not registered.....	25	
Steamers.....	4	4,181	Schooners and barges . . . . .	375	97,922
Canal boats.....	416	42,841	Tugs and steamboats.....	289	32,722
Sail barges . . . . .	14	3,858			
	439	51,665		689	130,644

RECAPITULATION.

Ocean traffic . . . . .	43	104,373
United States traffic . . . . .	439	51,665
Inland traffic.....	689	130,644
Grand total.....	1,171	286,682

Exclusive of Richelieu & Ontario and other navigation companies steamers, local craft and market boats



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## MERCHANDISE.

Inward.		Outward.	
Soft coal...	89,652 tons.	Lumber.....	45,581,000 feet.
Hard coal .....	12,455 "	Pulpwood.....	32,389 cords.
Sulphur.....	10,400 "	Sand.....	140,600 tons.
China clay.....	1,086 "	Woodpulp .....	2,805 "
Pig iron.....	3,696 "	Concrete beams .....	622 "
Sand .....	549 "	Laths.....	1,911,000
Rosin .....	342 "		
Woodpulp.....	1,017 "		
Pulpwood .....	3,658 cords.		
Bricks.....	2,999,500		

Exclusive of freight in and out by Richelieu & Ontario and other local navigation steamers.

## RECEIPTS AND DISBURSEMENTS FOR THE YEAR 1913.

Receipts.		Disbursements.	
	\$ cts.		\$ cts.
Tonnage dues .....	\$ 3,695 19	Current expenses.....	\$ 512 05
Harbour dues: Inward....	6,117 42	Salaries and commissions	3,360 92
" Outward....	4,879 19	Printing and stationery..	86 53
Commutation .....	800 00	Repairs and general	
Rent of wharves and		harbour expenses.....	2,594 67
moorage .....	5,741 31		6,554 17
Total receipts.....	\$ 21,233 11	Interest on debentures ..	9,525 00
Interest on deposits .....	600 70	Sinking fund.....	1,905 00
	21,833 81		11,430 00
Balance on Dec. 31, 1912.....	24,719 64	Total expenses on revenue ....	17,984 17
		Deposits in bank, and cash on hand,	
		Dec. 31, 1913.....	28,569 28
Grand total.....	46,553 45	Grand total.....	46,553 45

HENRI GODIN,  
Secretary-Treasurer.

THREE RIVERS, January 7, 1914.







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REPORT OF PICTOU HARBOUR COMMISSION.

PICTOU, N.S., February 20, 1914.

The Hon. Minister of Marine and Fisheries,  
Ottawa, Ont.

SIR,—I have much pleasure in enclosing you the account of receipt and expenditures of the Harbour Commission for the Port of Pictou, N.S., for the year ending the 31st December, 1913.

I am, sir, your obedient servant,

H. B. ROSS,

*Secretary.*

PICTOU HARBOUR COMMISSION—In account with H. B. Ross, Secretâry.

1913.	Dr.	\$ cts.	\$ cts.
April 23	To paid Wm. McLean, bushing channel to East river.....	18 00	
June 5	Phil. Hall, painting buoys.....	7 50	
" 11	S.S. <i>Hiawatha</i> putting out harbour buoys.....	30 00	
July 23	E. McDonald, bushing East river.....	26 50	
Aug. 27	Robert McRay.....	5 00	
Oct. 24	Est. Geo. McDonald, secretary, for six months.....	50 00	
" 24	Scotia Printing Co.....	4 36	
" 24	Removing obstruction in East river.....	10 00	
Dec. 31	S.S. <i>Hiawatha</i> taking in buoys.....	30 00	
" 31	J. W. McRay, legal services.....	16 00	
" 31	A. D. Barry, lumber.....	7 20	
" 31	Alex. Talbot, repairing crane.....	25 00	
" 31	Ross Chapman.....	5 00	
" 31	Telegrams and 'phone.....	1 00	
" 31	H. B. Ross, secretary, six months.....	50 00	
	Balance .....	1,124 11	1,409 67
1912.	Cr.		
Dec. 31	By balance .....	731 56	
1913.			
Dec. 31	Amount received from Collector of Customs, harbour dues for year ending December 31.....	678 11	1,409 67
" 31	By balance .....		1,124 11

PICTOU, December 31, 1913.

D. SUTHERLAND, *Chairman.*

H. B. ROSS, *Secretary.*



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## ANNUAL REPORT OF THE TORONTO HARBOUR COMMISSION FOR THE YEAR 1913.

TORONTO, August 18, 1914.

His Worship Mayor HOCKEN

and Council of the Corporation of the City of Toronto, City Hall,

GENTLEMEN,—Herewith we submit for your information our report of the operations carried on under the jurisdiction of the Toronto Harbour Commission during the year 1913. The reports of the officials included herein give in detail the progress made on the various works planned by us, and a financial statement is also included certified to by our auditors, showing the details of receipts and expenditures during the year.

We are pleased to be able to show such substantial progress in carrying out the plans which have been prepared under our direction, and approved by your body and the Dominion Government, and we wish to take this opportunity of acknowledging the assistance which you have always readily afforded us in our desire to carry out the duty imposed upon us of developing in an adequate manner Toronto's harbour and waterfront.

Yours sincerely,

TORONTO HARBOUR COMMISSION,

F. S. SPENCE.

R. HOME-SMITH.

R. S. GOURLAY.

T. L. CHURCH.

L. H. CLARKE, *Chairman*.

Mr. LIONEL H. CLARKE, Chairman,  
and Members, Toronto Harbour Commission,  
Toronto, Ontario.

GENTLEMEN,—I have the honour to submit herewith reports covering the work carried on by the staff in your employ during the year 1913, and am pleased to be able to report very substantial progress in the operations during the year.

The end of the year 1912 saw the completion of the preliminary planning which your board had to face before actual work could be commenced on the development and improvement of the public property placed by the citizens of Toronto in your charge during November of 1913. The general plans prepared under your direction for the development of Toronto harbour and of the Toronto harbour industrial district, as well as for the general improvement of the outer waterfront and the construction of breakwaters for the purpose of protecting the waterfront east and west of the inner harbour were approved by both the city council of Toronto and the members of the Government of Canada, both bodies undertaking the portions of the work allotted to them and the Government by an order in council dated June 10, 1913, approving the complete plans as submitted to them by your board.

During the year 1913 such substantial progress was made in the preparation of detail working plans and the completion of arrangements for the letting of contracts and starting the actual work that a contract was made for the dredging operations under the commissioners' jurisdiction which provides for the filling of the industrial district and reclamation of other lands at a minimum cost of \$3,950,000, and an option to increase the amount of dredging at the same unit price per cubic yard, at the will of the commissioners, up to an amount not to exceed a total cost of \$6,320,000. At the same time the Government let a contract for the construction of a breakwater



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extending from Woodbine avenue to the eastern channel on the eastern lake front, the construction of a breakwater extending from the western channel to the Humber river on the western lake front, and the construction and dredging of the ship channel in the industrial district, the total contract calling for an expenditure of \$5,371,-372.17.

The Government has also undertaken the construction of lift bridges across the eastern and western entrances to the harbour, and across the ship channel in the industrial district but the contract for this portion of the work has not yet been let.

## DOCK PROPERTIES.

As the commissioners in the beginning of the year 1912 had adopted a policy of placing only one year leases on the docks along the waterfront until the development of the inner harbour had been decided upon and carried out, the wharves on harbour square dock at the foot of Bay street were again open for lease in the spring of 1913. Early in the year an important merger of steamship companies had been promoted as a result of which the Hamilton Steamship Company, the Turbinia Steamship Company, the Niagara Navigation Company and the Inland Lines, Limited, all became the property of the Richelieu & Ontario Navigation Company. This latter company hold a lease of the dock at the foot of Yonge street on the west side of the Yonge street slip, formerly known as the Geddes wharf, which lease ran till March 31, 1915. After the amalgamation the company desired to make new arrangements for the handling of its various lines and the commissioners accepted a surrender of the lease in question, and leased to the company three wharves being the east, west and south wharves of the Harbour Square dock for a rental of \$13,000 for one year, this being the highest rental ever received for this dock.

The Yonge street wharf, the lease of which was surrendered by the company, was utilized by the commissioners, as a public dock and the office of the harbour master was installed in the south end of the freight shed on the east face of the dock in order that he might be in a convenient location for the masters of vessels having business to transact with him.

During the year certain repairs were made to the Ferry dock at Centre island for the purpose of placing it in a condition of safety, and as a result of the expenditure required for this purpose the rental received from the Toronto Ferry Company for the use of this dock was increased from \$500 to \$1,000 per year.

Details of the expenditure incurred in the carrying out of the repairs to the various dock properties are given in the report of the engineer.

## PUBLIC DOCK.

From the date of the formation of the new board of harbour commissioners there had been an insistent demand on the part of the public for the establishment of a public dock, at which any vessel entering Toronto harbour and not consigned to any one of the companies controlling wharves could be docked and its cargo discharged. This demand had been voiced persistently through the press, and when the new arrangements with the Richelieu & Ontario Navigation Company left the Yonge street dock free, your board decided to utilize it for public dockage purposes, and it was so operated during the season of 1913, with results which were most satisfactory considering that it was the first attempt to supply such a dock in Toronto harbour. Mr. John M. Allen, deputy harbour master, filled the office of wharfinger during the season in a most satisfactory manner, and was very active in securing business for the dock.

The system adopted for carrying on business in the freight sheds attached to the dock, was to place the wharfinger in charge for the purpose of directing operations, and to charge a certain rate per ton for all merchandise handled, either in or out, the



employees of the boat landing the cargo or the company to which it was consigned performing all work in connection therewith.

During the season thirty-four vessels landed or received cargoes from the Commissioners' dock, the total net tonnage of these vessels being 42,297. Inward freight to the amount of 4,698 tons was handled, and outward freight to the amount of 3,083 tons was handled, on the wharf during the season, the wharfage dues on this freight amounting to \$2,226.40. In addition to the handling of freight a certain amount of accommodation was provided for the storage of goods for various firms, yielding a revenue of \$162.10, while the sum of \$125 was received in payment for the docking of two vessels at the wharf during the winter, this bringing the total revenue from the dock up to \$2,513.50.

We have every reason to believe that the revenue from this source would have been greater had it not been that the great storm of November 11, in which nineteen vessels were lost, had a serious effect on the amount of shipping during the balance of the season, while a fire which took place in the east shed on the morning of Sunday, November 9, restricted the amount of space available for freight storage.

In addition to the direct revenue yielded by the operation of a public dock the commissioners were saved the expense of arranging for office space for the use of the harbour master.

#### MOTOR BOATS.

In order to have it in a convenient location the commissioners' motor-boat was placed in a stall at the foot of York street rented from the Marine Construction Company in the spring of 1913, and on the morning of June 11, was destroyed in a fire which swept through the boat-houses belonging to this company and destroyed eight launches. A satisfactory adjustment was made with the company holding the insurance, a cash payment of \$1,500 being received to cover the damage, and the commissioners being allowed to retain the boat for whatever value there was in it. Tenders were subsequently called for from all the principal boat companies for the construction of a new and larger launch, and the Gidley Boat Company of Penetang was awarded a contract to build a mahogany launch capable of carrying eighteen people. This boat was completed and delivered to the commissioners in September, 1913, and has since given every satisfaction.

The boat which was destroyed by fire was subsequently rebuilt with the engine overhauled, and was placed at the disposal of the engineering department for use as a work boat.

#### LIFE SAVING.

The arrangements made in 1912 by the commissioners, under which the life-saving service on Toronto harbour, and the work of patrolling the harbour, and the enforcing of regulations, was undertaken by the life saving service for Canada, was continued during the year 1913. Under these arrangements the commissioners contribute the sum of \$3,050 towards the cost of maintaining the station, in return for the patrol service, and the maintenance and inspection of life saving apparatus.

During the year the life-saving station was removed from its former location on the western sandbar to a point on Wards island immediately west of the eastern channel, and the work of erecting a modern observation tower in connection therewith was commenced. Two fast launches were placed in commission by the Government for the purpose of carrying out the patrol work in addition to the regulation life boat, which was maintained for strictly life-saving work. A crew was formed and a continuous outlook maintained, night and day, at the station, with the result that many persons were rescued from the waters of the harbour, and undoubtedly many fatalities were averted.



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While the enforcement of regulations by the crew was not in every sense ideal, the life-saving portion of the work was performed in a most satisfactory manner.

Towards the close of the year a spirit of disaffection became evident amongst the members of the crew and an investigation was held by Commander Thompson of the Dominion life-saving service, as a result of which the entire crew, including the coxswain and mate, were given their discharge on December 15. A new crew has since been appointed.

At the request of Commander Thompson your engineering department co-operated with his department in the preparation of plans for the erection of a sub-station which is to be placed at the north end of the old crib work, east of Hanlan point. The plans have since been approved, and it is expected that this sub-station will be erected during the ensuing year.

## REMOVAL OF SAND.

The removal of sand from the bed of the harbour by private companies was forbidden by the commissioners in 1912, the date set for the termination of the condition under which sand could be so removed being December 31 of that year. Following notification to this effect from the commissioners the Sand & Supplies, Limited, the company carrying on the principal business of this kind, entered into a contract with the Royal Canadian Yacht Club for the removal of sand from the mooring ground north of the club's island home which is leased from the commissioners. The commissioners took this as a breach of the by-law passed by them prohibiting the removal of sand from the harbour and instituted a suit against the company and the Yacht club for the purpose of preventing the carrying out of the contract. The case was tried before the Honourable Mr. Justice Middleton, and a decision given by him to the effect that the company must cease all dredging operations within the limit of the harbour, and must pay the commissioners for the sand removed during the year 1913. The Yacht club and Sand & Supplies, Limited, both accepted this judgment and the company, besides paying all costs of the action, paid to the commissioners the sum of \$2,420 for the 24,200 cubic yards of sand removed by them during the year.

Since then no further effort has been made by any company to dredge sand from the bed of the harbour.

## PROPERTY.

Negotiations with the Canadian Pacific Railway which had been carried on during a portion of the year 1912 for the exchange of lands at the foot of Bathurst street were consummated early in 1913, and an agreement drawn up by which the commissioners transferred to the company a portion of the old Queens wharf property, and a portion of the waterlot to the west of the Queens wharf, in exchange for a portion of the waterlot owned by the Canadian Pacific Railway lying to the west of the commissioners' property and a piece of land at the foot of Bathurst street, which was owned by the company. In addition to the transfer of the land the company surrendered its lease in perpetuity to the Queens wharf, and the Queens Wharf waterlot, and also surrendered its rights in perpetuity to dock privileges in the old western channel and in the slip to the east of the Queens wharf. This agreement is of the greatest importance to your board giving you as it does absolute control of the waterfront from Bathurst street to the Humber river, and the right to fill in the old western channel upon receiving the consent of the Government.

In addition to the surrender of its leasehold and docking rights and the transfer of properties, the Canadian Pacific Railway also agreed to give the city of Toronto an easement and right of way 100 feet wide through its property for the purpose of extending Bathurst street south in a straight line, and to undertake at its own expense the re-arrangement and alteration of its buildings for the purpose of facilitating this extension. In return for this, the commissioners asked the city to deed to the Cana-



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dian Pacific railway a small triangular piece of the old Asylum Waterworks lot for the purpose of giving the Canadian Pacific railway entrance to the property acquired by it. This request was acceded to by the city council and the necessary deeds were drawn up and executed by the mayor and city treasurer.

When the city transferred its waterfront property to your board in 1911, it did not own the 19-acre waterlot in front of the exhibition grounds and immediately to the east of Dufferin street. The commissioners applied to the Government for a patent to this lot in order to complete their ownership of the waterfront property; and on January 27 the patent was received from the Government deeding the property to the harbour commissioners. Application has been made to the Government for patents of the waterlots north and south of the new western channel including the bed of the old western channel and also for the waterlot lying in front of Ellis avenue on the lake shore, and east of the eastern channel on Fisherman island. Details of the transfer of these properties have yet to be arranged but there is every indication that the Government will comply with the applications.

While the transfer of property from the city to your board gave you very full control of the waterfront east and west of the inner harbour, the greater portion of the property fronting on the bay between Bathurst street and Cherry street was still left in the control of the railway companies and private owners. In order to remedy this and secure complete control of the entire waterfront, negotiations were opened with the Canadian Pacific railway and the Grand Trunk railway for the purpose of securing the riparian rights of these companies between York street and Bathurst street. These negotiations have now reached the stage where a definite basis has been arrived at, and it only remains for certain details to be settled in order to have the agreement executed and the absolute control of this portion of the waterfront vested in the harbour commissioners. This will give your board control of the front from Bathurst to Yonge street; and under the agreement for the construction of the viaduct the board can exercise its right to secure control of the property not now owned by it between Yonge street and Parliament street, thus securing complete control of the entire waterfront in order that it may be developed in the interests of the citizens of Toronto.

#### RIPARIAN RIGHTS.

Early in the year the suit of Col. W. Hamilton Merritt which had been instituted against the city of Toronto previous to the acquisition by your board of the Toronto harbour industrial district, was carried by Colonel Merritt to the Supreme Court at Ottawa, the lower courts having decided against the plaintiff's claim that his property on the south side of Eastern avenue possessed riparian rights in Ashbridge bay. Mr. G. R. Geary, K.C., corporation counsel, successfully opposed the appeal, and the Supreme Court upheld the decision of the Court of Appeal for Ontario and decided that no riparian rights were attached to this property. Since that time Mr. H. M. Mowat, K.C., representing Col. Merritt and a number of other owners of property abutting on the industrial district to the north, has been in negotiation with your board, through your solicitor, Mr. A. C. McMaster, and the other officials, and a basis of agreement has now been reached, as a result of which these property owners in return for certain privileges which they ask your board to grant them will forego their claims to riparian rights.

Some time before the decision of the Supreme Court in the Merritt case the Schofield-Holden Machine Company and Messrs. Rickey Brothers, two firms carrying on the business of boat builders at the foot of Carlaw avenue, instituted similar suits against the city, to which suits the harbour commissioners were later added as co-defendants. These actions were tried jointly before the Chancellor, Sir John Boyd. Mr. McMaster, the board's solicitor, defended the interests of the harbour commissioners,



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and Mr. Geary looked after the interests of the city. Since the end of the year the chancellor has handed down a decision adverse to the plaintiff in which he makes it clear that there are no riparian rights attached to the properties in question. The decision has since been appealed to the Court of Appeal for Ontario.

## TORONTO VIADUCT.

Following the appeal of the railway companies to the Governor General in Council against the order of the railway commissioners for Canada for the separation of railway and highway grades across Toronto waterfront by means of a viaduct, the railways abandoned their efforts to have bridges substituted as a means of grade separation and the harbour commissioners were a party to negotiations carried on between the city and the railways under the leadership of Mr. H. L. Drayton, chief railway commissioner for Canada, which resulted in an agreement for the construction of a viaduct along a different route from the one previously ordered. This agreement was signed by all parties and finally executed on July 29, 1913, and was confirmed by an order of the Board of Railway commissioners for Canada giving it effect. Under this agreement the railways are to acquire all the property south of the railway tracks on the esplanade from Yonge to Cherry street; and after deducting a strip therefrom 230 feet in width to serve as the right of way for the viaduct, the harbour commissioners have the option of taking over the balance of the property so acquired by paying to the railway companies one-half the amount paid by them for the property, or in the alternative to take over that portion of the property so acquired lying to the south of the viaduct right-of-way upon paying to the companies one-third of the total cost. This option does not have to be exercised by the commissioners until after the entire property has been acquired, and when exercised following the agreement just about completed with the Canadian Pacific railway and the Grand Trunk railway for the acquisition of all riparian rights from York street to Bathurst street will give the commissioners control of the inner waterfront from Bathurst street on the west to Parliament street on the east.

## FIRES.

During the year two small fires resulted in a certain amount of damage to the wharf properties owned by your board. The first fire occurred on September 13, 1913, in the offices and waiting rooms attached to the Toronto dry dock at the foot of Bay street. The fire department rendered prompt aid and the fire was checked before it assumed serious proportions. A settlement was made with the insurance companies under which they paid \$1,500 which covered estimated loss.

On November 9 fire was discovered in the east shed of the Yonge street dock which was filled at the time with a cargo of macaroni and brown sugar. The fire started at a very awkward point behind the boxes of macaroni, but notwithstanding that there was a very strong wind blowing the fire department subdued the flames before the loss became serious. The contents, which were considerably damaged, were covered by insurance held by the consignees and settlement was made with the insurance companies for the damage to the building for the sum of \$1,600. In each case the damage was repaired by the construction branch of the engineering department at a cost covered by the amount of insurance secured.

## LEASES.

The home of the Parkdale Canoe Club was totally destroyed by fire on February 8, 1913. As the location of this building was directly in the line of the improvements planned by your board for the western waterfront, the officials of the club were notified that they would not be allowed to erect a new building on the same location, and there followed negotiations between the club and your board as a result of which



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the club has been given a lease of a location on the property reserved for an aquatic club on the western waterfront at the foot of Wilson avenue. As this location is at the present time some distance out from the shore in the lake the commissioners agreed with the club, in return for the surrender of its leasehold rights at Sunnyside, to erect foundations suitable for a new club building on the new location. This was done in the fall of the year so that the foundation might be ready for the building during the year 1914.

The negotiations all through were conducted in a most reasonable spirit by the representatives of the club, all showing every desire to meet the wishes of the commissioners and facilitate the carrying out of the improvements planned for Toronto's waterfront.

When the Ashbridge Bay district was deeded to the harbour commissioners there was a small lot immediately east of the main entrance to the district under lease to a company called the Foundry Specialty Company. The buildings on the property were of very rough finish, being of cheap frame construction, and covered in some places with metallic sheeting. After going through many changes the property passed into the hands of Mr. R. P. Powell, the owner of the Queen City Foundry Company. In laying out the streets in the industrial district a small lot was formed behind the property held by this company, and negotiations were opened with Mr. Powell for the purpose of leasing him additional property and securing certain improvements to the building. As a result of these negotiations Mr. Powell leased the additional property, and agreed to replace the buildings which then existed by permanent structures of brick, which agreement he has since carried out, so that the building is now a presentable foundry building, and has ceased to be an eyesore.

The Polson Iron Works Company in arranging for the installation of a dry dock in connection with their plant on the esplanade, had arranged with the city for the closing of Frederick street south of the esplanade and the leasing of this property and the block to the west having 66 feet frontage for the purpose of constructing the basin for the proposed dry dock. This lease had not been completed when the property was transferred to your board, there having been some objection made by the Polson Company to some of the terms governing the rental. Following the transfer of the property the matter was referred to your board to deal with, but by this time the general conditions of the new viaduct agreement had been arranged, and it was known that the Polson property along with other waterfront properties would have to be expropriated for viaduct purposes. With this knowledge it was felt unwise to re-open the question of leasing the property to the Polson Company, and your board decided that the lease would not be completed, but that the property would be held free from occupancy until required for viaduct purposes.

#### ENTERTAINMENT.

During the year your board joined with the city council in the entertainment of the Montreal city council on the occasion of a visit by the latter body to Toronto, and also aided in the entertainment of the delegates to the National Municipal League, and during September had also the pleasure of entertaining the Honourable Robt. Rogers, upon which occasion he was taken for a tour of the harbour and waterfront, and the improvement planned explained to him on the ground. The total spent in these entertainments was \$493.52.

#### FRUIT MARKET.

The question of the provision of a modern fruit market for the purpose of accommodating the increasing fruit trade of the city was revived during 1913, and a special committee of council under the chairmanship of controller Thos. Foster was formed to consider the matter and make a report. Your board was requested to act with this committee as were also representatives of the board of trade. The com-



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mittee inspected the present fruit market at the foot of Yonge street, and at a meeting held later your board was requested to undertake the preparation of a report accompanied by plans suggesting a suitable market for Toronto. In order to secure the information necessary for such plans and work, the chief engineer and secretary visited several American cities and studied market conditions in these places. The report and plans were then prepared and submitted to your board preliminary to their submission to the joint committee, but the press of civic business followed by the municipal elections interfered with the holding of another meeting, and with the election of a new council the matter was allowed to drop. The plans and report are, however, ready for submission to the city at any time they may request.

## TRANSPORTATION.

On October 14, your board instructed the engineer and myself to consult with commissioner Home Smith and prepare plans for the development and use of the new waterfront to be provided following the construction of the viaduct and for a proper railway service to the property to be reclaimed by the commissioners. This was done, and on November 26 of the same year a plan was presented to the commissioners showing a transportation system by means of which radial railways from various points outside of Toronto could be brought into the waterfront to a central station in the neighbourhood of Bay street. The plan was approved by the board and was submitted to the board of control on the same day accompanied by a letter explaining it. The board of control referred the plan to a committee of engineers consisting of the works commissioners for the city, the chief engineer of the Provincial Hydro-Electric commission and the chief engineer of the Toronto harbour commission for the purpose of securing a report. The matter is still waiting consideration by this board.

## FINANCES.

Following the adoption of the plans for the improvement of the harbour and waterfront and the undertaking by the Government to carry out under the auspices of its Public Works Department a large portion of the work, your board was faced with the necessity of carrying out the dredging operations which were planned to be proceeded with co-incidentally with the breakwater construction undertaken by the Government. Tenders were called for for the purpose of awarding the contract for this work, and the contract was finally awarded to the Canadian Stewart Company whose price of  $19\frac{3}{4}$  cents per cubic yard was the lowest of five tenders.

In order to be in a position to enter into such a contract it was felt that it would be wise to arrange for sufficient finances to cover at least one year's operation, and it was decided to make an issue of debentures to the amount of \$1,500,000. For this purpose the debentures were printed in denominations of \$1,000 currency and its equivalent in sterling, and both principal and interest were guaranteed by the city, the bonds being for forty years and bearing interest at  $4\frac{1}{2}$  per cent. At the request of the city treasury board these bonds were not offered for sale in the English market but efforts to sell them were confined to the American market, this being done in order that there might be no conflict between the harbour bonds and several large blocks of city bonds which were then being offered for sale in England. This resulted in securing a slightly lower price than could otherwise have been secured, and the price was also effected by the extreme stringency of the money market at that time, September, 1913. The entire issue was sold to Messrs. Wm. A. Read and Company, of New York city, the price realized being  $89\frac{1}{2}$  with accrued interest, the sale netting the commissioners \$1,342,500, and the accrued interest up to the date of the delivery of the last block of bonds amounted to \$18,214.34. As the largest portion of this money would not be needed until the work was well under way arrangements were made with the Toronto General Trusts Corporation and the National Trust Company, under



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which almost the entire amount received from the sale of bonds was placed with these companies for investment on their guaranteed plan. Under this plan the companies used the money for investment only in certain prescribed securities paying interest to the commissioners for the use of it at 5 per cent per annum, and guaranteeing the return of the principal by a certain date. In this way the commissioners were assured of sufficient capital to commence operations, and at the same time were at but little loss by reason of having the money lying idle in the bank.

The net revenue for the year exclusive of receipts from the sale of debentures, insurance payments and other items balanced by contra accounts amounted to \$68,679, of which sum \$56,384.46 was received in rentals, \$8,593.24 in harbour dues, \$2,513.50 from the public dock, \$615.75 bank interest, and \$572.05, being interest on debentures on deposit with the Bank of Toronto. This revenue shows an increase of \$12,222.79 over the revenue of 1912, the greater portion of this amounting to \$8,763.42, being an increase in rentals received.

The expenditures on revenue account during the year amounted to \$27,264.61, leaving a balance of \$40,819.59.

During the years 1912 and 1913 various expenditures on capital account were made out of revenue as no provision has been made for finances to meet the capital expenditures. A careful account was kept of all such expenditures. And upon the sale of the first issue of bonds the amount of \$70,847.40 was transferred from capital to revenue accounts to repair the deficiency thus created. It was very necessary that the revenue account should be carefully safeguarded as of necessity during the first two or three years of operation very heavy capital expenditures will have to be met before any large revenue can be looked for, and the interest of the bonds issued for the purpose of meeting these capital expenditures will have to be met out of the revenue account.

The expenditure on capital account during the year 1913 amounted to \$149,821.42, details of which are given in the report of the chief engineer.

#### INSURANCE.

When considering the civic estimates for the year 1913, the board of control asked the harbour commissioners to take over the city's hydraulic dredges Nos. 1 and 2, and also a small clam shell dredge, and to undertake the operation and maintenance of the same. The commissioners agreed, and the vessels were added to the plant owned by your board. This resulted in an increase in the value of the property to be covered by insurance, upon the expiration of the old policy on November 17, the total amount of property being increased from \$196,604 for 1912 to \$301,094 for 1913, and the premiums on the above increased from \$2,791.77 to \$4,275.53.

#### STAFF.

The work of the entire staff in my department during the year was most satisfactory, and where all the service was rendered cheerfully and with enthusiasm it would be invidious to single out any individual member for special mention. I may only say that the entire staff has been most loyal in looking after the interests of your board, and that the work in all branches is now in a most satisfactory state. I would like also to take this opportunity on behalf of the staff and myself of offering to your board our appreciation of the kindly manner in which our efforts have been received by you, and the substantial way in which we have been rewarded.

The financial statement for the year prepared by the accounting department is attached hereto together with the certificate from the auditors.

All of which is respectfully submitted.

ALEX. C. LEWIS,

*Secretary.*



Cash on hand January 1, 1913 .. . . . . .	\$	38	42
Rents received .. . . . . .		56,384	46
Harbour dues .. . . . . .		8,593	24
Wharfage dues (Public Dock) .. . . . . .		1,918	70
Insurance returns (Toronto Ferry Dock fire) .. . . .		1,500	00
Interest on deposits .. . . . . .		615	75
Interest on debentures (with Bank of Toronto) .. .		572	05
Debenture loan .. . . . . .		960,000	00
Accrued interest on debenture loan .. . . . . .		8,202	03
Contractor's deposits on contract .. . . . . .		197,500	00
Interest on contractors' deposits .. . . . . .		665	60
Suspense cash from 1912 .. . . . . .		80	14
		\$1,236,070	39

Investments (short period) .. . . .	\$ 650,000 00
Insurance Wharf Properties, etc. . . . .	2,931 99
Dredging (contract) . . . . .	643 09
Bulkhead foot of York Street . . . . .	272 73
Bulkhead between Ferry Dock and Inlands . . . . .	818 87
Bulkhead between Jacques Dock and Ferry Lights, Beacons and Buoys . . . . .	478 74
Travelling Expenses . . . . .	1,021 51
General Office Expenses.. . . .	3,169 11
Life-saving Station . . . . .	5,424 07
Filling water lots Bathurst Street.. . . .	2,851 32
Launch House erection.. . . .	240 45
Automobile No. 1 (Maintenance) . . . . .	597 35
(Overhauling) . . . . .	1,243 36
(Insurance) . . . . .	569 39
Automobile No. 2 (Capital).. . . .	187 25
Radial Railway Terminals . . . . .	3,100 00
Motor Boat No. 1 (Maintenance) . . . . .	42 04
(Capital) . . . . .	560 00
Motor Boat No. 2 (Maintenance) . . . . .	500 00
Motor Boat No. 4 (Capital).. . . .	225 05
Orange Peel Bucket Dredge.. . . .	1,300 00
Hydraulic Dredge No. 1 . . . . .	2,678 50
Hydraulic Dredge No. 2.. . . .	7,405 33
Hydraulic Dredge No. 3 . . . . .	11,607 42
Engineering Equipment . . . . .	17,422 08
Debenture Issue Expenses . . . . .	52 16
Parkdale Canoe Club Cribs.. . . .	1,277 50
Hydrographic Survey.. . . .	416 84
Precise Levels (Bench Marks).. . . .	474 70
Grade Separation . . . . .	812 20
Waterfront Survey.. . . .	79 40
Waterfront Development.. . . .	1,554 51
Toronto Ferry Dock, Centre Island . . . .	43,425 44
	2,357 61



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Toronto Ferry Dock foot of Bay Street..	6,696	70		
Designing Department .. . . . . . . . . . .	10,684	86		
Survey Department .. . . . . . . . . . .	14,644	03		
Dredging Account.. . . . . . . . . . .	11	06		
Ward's Island Dock Repairs.. . . . . . . . . . .	28	60		
Plant Account .. . . . . . . . . . .	41	03		
South of Harbor Square Docks .. . . . .	34	15		
Inland Dock Line.. . . . . . . . . . .	220	84		
Advertising and Publicity .. . . . . . . . . . .	3,752	34		
Queen's Wharf Maintenance .. . . . . . . . . . .	208	62		
Public Dock Maintenance .. . . . . . . . . . .	173	12		
Foundation Tests.. . . . . . . . . . .	522	87		
Filling Water Lots Central.. . . . . . . . . . .	57	68		
Toronto Harbor Industrial District, Filling	1,190	45		
Toronto Harbour Industrial District, Maintenance .. . . . . . . . . . .	157	37		
Borings .. . . . . . . . . . .	1,821	96		
Miscellaneous Docks.. . . . . . . . . . .			\$	68 95
Lakeside Home Dock .. . . . . . . . . . .	7	55		
Property Survey .. . . . . . . . . . .	4,787	47		
Tool House Harbor Square.. . . . . . . . . . .	6	18		
Public Dock Repairs and Scales .. . . . .	1,527	09		
Canadian Lake Line Dock .. . . . . . . . . . .	749	83		
Office Furniture.. . . . . . . . . . .	388	40		
Dredge Superintendent's Office, Furniture	21	46		
Accounts Receivable.. . . . . . . . . . .	1,133	00		
Drafting Department.. . . . . . . . . . .	22,401	55		
Dominion Bank.. . . . . . . . . . .	198,165	60		
Bank of Toronto .. . . . . . . . . . .	98,958	35		
Debenture Loan Discount .. . . . . . . . . . .	100,800	00		
Interest on Overdrafts .. . . . . . . . . . .	1,187	80		
Loan by Bank of Toronto (1912) .. . . . .	4,437	47		
Cash on hand December 31, 1913 .. . . . .	115	31		
	\$1,241,272	75	\$	68 95
By amount carried over from 1912 and proportioned to charges in 1913.. . . . \$	5,163	71		
Furniture Trans. .. . . . . . . . . . .	568	85		
	\$	4,594	86	
Less Credits.. . . . . . . . . . .		68	95	
Less of Deprec. of Furniture .. . . . . . . . . . .	538	55	\$	5,202 36
				\$1,236,070 39

WATERFRONT DEVELOPMENT.

To Capital Expenditure of 1912 carried over to 1913 and transf. .. . . . \$	37,423	42		
Less amount proportioned over works .. . . .	5,163	71		
			\$	32,259 71



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*To Expenditures for Year 1913—*

Dredging Contract.. . . . .	643 09	
Debenture Discount .. . . . .	2,520 00	
Automobile No. 1 (Maintenance).. . . .	1,243 36	
(Overhauling).. . . . .	569 39	
(Insurance).. . . . .	187 25	
Waterfront Development No. 1.. . . .	43,425 44	
Travelling Expenses .. . . . .	3,169 11	
Filling Water Lots Bathurst Street .. .	240 45	
Drafting Department.. . . . .	21,794 32	
Borings .. . . . .	1,821 96	
Foundation Tests .. . . . .	522 87	
Radial Railway Terminals .. . . . .	42 04	
Orange Peel Bucket Dredge .. . . . .	2,678 50	
Hydraulic Dredge No. 1.. . . . .	7,405 33	
Hydraulic Dredge No. 2 .. . . . .	11,607 42	
Hydraulic Dredge No. 3 .. . . . .	17,422 08	
Grade Separation .. . . . .	79 40	
Debenture Issue Expenses .. . . . .	1277 50	
Parkdale Canoe Club Cribs.. . . . .	416 84	
Hydrographic Survey.. . . . .	474 70	
Waterfront Survey.. . . . .	1,554 51	
Precise Levels (Bench Marks).. . . . .	812 20	
Designing Department .. . . . .	10,617 86	
Survey Department.. . . . .	14,509 43	
Motor Boat No. 2 (Maintenance).. . . .	225 05	
Advertising and Publicity .. . . . .	3,752 34	
Toronto Harbor Industrial District.. .	1,947 82	
Property Survey .. . . . .	4,787 47	
Insurance Account.. . . . .	398 84	
Engineering Equipment.. . . . .	34 76	
Entertainment Account .. . . . .	803 80	
Survey and Drafting Equipment.. . . .	\$ 1,145 67	
Property Transferred.. . . . .	5,000 00	
Furniture Transferred .. . . . .	20 25	
Balance to Waterfront Development, Dec. 31, 1913.. . . . .	183,078 92	
	<hr/>	
	\$189,244 84	\$189,244 84

## GENERAL BALANCE SHEET, DECEMBER, 31, 1913.

Properties .. . . . .	\$8,741,752 29
Office Furniture .. . . . .	3,400 68
Survey and Drafting Equipment.. . . .	1,145 67
Investments .. . . . .	665,000 00
Accounts Receivable .. . . . .	2,894 55
Rents Receivable .. . . . .	4,136 00
Plant Account .. . . . .	165,234 60
Bank of Toronto .. . . . .	98,958 35
Dominion Bank .. . . . .	198,165 60
Cash on Hand .. . . . .	115 31
Rentals Accrued.. . . . .	3,485 67



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Debenture Loan Discount .. .. .	98,280 00	
Waterfront Development Cap. .. .	183,078 92	
Contractors' Deposits and Interest.. .		\$ 198,165 60
Debenture Loan.. . . .		960,000 00
Suspense Payments.. . . .		1,230 94
Depreciation of Furniture .. . . .		1,838 55
Insurance (Toronto Ferry Fire) .. .		1,500 00
Accrued Interest for Debentures .. .		8,202 03
Income and Expenditures.. . . .		105,287 32
Property No. 1 (Old Harbor Board).. .		472,340 00
Property No. 2 (City of Toronto).. .		8,262,584 00
Plant Account (City of Toronto) .. .		154,500 00

\$10,165,648 44 \$10,165,648 44

T. Graydon, *Accountant.*

We beg to report that we have maintained a running audit of the books and accounts for the past year, and certify that the statements attached are correct, and are in accordance with the books of the Commissioners.

The insurance policies and receipt from the bank for securities held by them have been examined and are in order.

S. BRUCE HARMAN,

SYDNEY H. JONES,

*Auditors.*

1st April, 1914.

PLANT ACCOUNT.

Hydraulic Dredge No. 1 .. . . .	\$ 20,000 00
Hydraulic Dredge No. 2 .. . . .	55,000 00
Hydraulic Dredge No. 3 .. . . .	75,000 00
Orange Peel Bucket (Clam) .. . . .	1,500 00
Scow No. 1 .. . . .	500 00
Scow No. 2 .. . . .	500 00
Scow No. 3.. . . .	1,000 00
Scow No. 4.. . . .	250 00
Motor Boat No. 1 .. . . .	2,860 00
Motor Boat No. 2 .. . . .	750 00
Motor Boat No. 3 .. . . .	215 00
Motor Boat No. 4 .. . . .	1,300 00
Automobile No. 1 .. . . .	3,000 00
Automobile No. 2 .. . . .	3,100 00
Tools, etc., at Harbor Square Tool House .. . . .	259 60
	\$165,234 60

INVESTMENTS.

*Debentures held by the Bank of Toronto—*

City of Toronto .. . . .	\$ 5,000 00
Canada Permanent Mortgage Corp... . . . .	10,000 00

*Guaranteed Investments (Short Period)—*

National Trust Co. Limited .. . . .	250,000 00
Toronto General Trust Corp. .. . . .	400,000 00
	\$665,000 00



SESSIONAL PAPER No. 21

BELLEVILLE HARBOUR COMMISSION.

BELLEVILLE, ONT., March 11, 1914.

The Deputy Minister of Marine and Fisheries,  
Ottawa, Ont.

SIR,—Enclosed please find statement of the harbour commissioners; also statement of the sinking fund, and harbour master's report. Trusting you will find the same in order,

I am, sir, your obedient servant,

B. L. HYMAN,  
*Chairman.*

STATEMENT of Harbour Commissioners.

1913.			
June 18.—	To balance in bank, December 9,		
	1912.. . . .	\$451 93	
" 18.—	To harbour dues.. . . .	440 20	
July 11.—	" "	426 93	
Aug. 12.—	" "	184 26	
Sept. 11.—	" "	229 90	
Oct. 10.—	" "	307 63	
Nov. 10.—	" "	346 01	
Dec. 29.—	" "	93 70	
		<hr/>	
		2,480.56	
1912.			
Dec. 13.—	By Auditor's fees.. . . .		\$5 00
1913.			
April 14.—	By Commissioner's expenses to Ot-		
	tawa.. . . .	38 00	
May 8.—	" Secretary's salary.. . . .	50 00	
Sept. 3.—	" Livery bill.. . . .	3 00	
Oct. 1.—	" Coupon interest on debentures ..	600 00	
Dec. 29.—	" Harbour Master's salary (13		
	months) .. . . .	650 00	
Nov. 19.—	" Sinking fund.. . . .	645 19	
Dec. 31.—	" Balance in bank, as per book....	489 37	
		<hr/>	
		\$2,480 56	\$2,480 56

STATEMENT of Sinking Fund to November 30, 1913.

To credit of Sinking Fund in bank, as per  
statement rendered December 9, 1912... \$4,137 36

1913.			
May 31.—	Interest.. . . .	61 35	
Nov. 19.—	Deposit.. . . .	645 19	
" 30.—	Interest.. . . .	63 70	
		<hr/>	
		\$4,907 60	

The above is a correct statement of the Sinking Fund to November 30, 1913.

B. L. HYMAN,  
*Chairman.*



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## HARBOUR MASTER'S STATEMENT.

## Imports—

16,671 tons of coal.. . . .	\$ 1,667 10
76,000 feet of lumber.. . . .	3 80
940 tons merchandise .. . . .	94 00
	<hr/> \$1,764 90

## Exports—

881 barrels of oil.. . . .	\$ 26 43
1,524 tons of merchandise.. . . .	152 40
1,050 tons of cheese.. . . .	105 00
	<hr/> 283 83

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\$2,048 73

Disbursements . . . . . 20 10

Deposited to the credit, Harbour Commissioners . . . . . \$2,028 63

All of which is respectfully submitted,

I have the honour to be, sir

Your obedient servant,

GEO. DULMAGE,

*Harbour Master.*



SESSIONAL PAPER No. 21

## APPENDIX NO. 14.

## PORT WARDENS' REPORTS FOR THE YEAR ENDING DECEMBER 31, 1913.

## REPORT OF THE ANNAPOLIS ROYAL PORT WARDEN.

ANNAPOLIS ROYAL, December 23, 1913.

To the Minister of Marine and Fisheries,  
Ottawa.

SIR,—I beg leave to submit to you my report for the past year in connection with my office as port warden of the port of Annapolis Royal. I have not been called upon during the past year to perform any duty in connection with my office. I have, therefore, no receipts to account for, nor any expenditures to make mention of.

Respectfully submitted,

JOSEPH J. MELANSON,

*Port Warden for the Port of Annapolis Royal.*

## REPORT OF THE PORT WARDEN OF THE PORT OF CHATHAM.

CHATHAM, N.B., March 13, 1914.

The Honourable,  
The Minister of Marine and Fisheries,  
Ottawa.

DEAR SIR,—I have the honour to enclose herewith copy of report of only survey held by me at the port of Miramichi during the season of 1913.

Navigation opened in April and closed in December, and while the number of vessels arriving was considerably above the average, the season was remarkably free from accident.

Yours respectfully,

M. A. GOGGIN,

*Port Warden at Chatham, N.B.*



REPORT OF THE PORT WARDEN OF THE PORT OF LOUISBERG, N.S.

LOUISBURG, C.B., December 31, 1913.

The Deputy Minister of Marine and Fisheries,  
Ottawa, Ont.

SIR,—I beg to submit the following report as port warden for the port of Louis-  
burg, N.S., for the year ending December 31, 1913.—

Jan. 10.—SS. <i>Elevyn</i> , survey on ship ashore.....	\$8 00
" 27.—SS. <i>Evelyn</i> , " ship condemned .....	8 00
" 22.—SS. <i>Maskinonge</i> , plates dented by ice.....	8 00
Feb. 12.—SS. <i>Strathtay</i> , certificate of seaworthiness .....	8 00
Mar. 4.—SS. <i>Knutsford</i> , survey on ship plates damaged.....	8 00
" 5.—SS. <i>Knutsford</i> , " after repairs .....	8 00
July 15.—SS. <i>Karmoe</i> , survey after collision.....	8 00
Aug. 13.—SS. <i>Glenaen</i> , " ship's bow damaged.....	8 00
" 15.—SS. <i>Glenaen</i> , " after repairs .....	8 00
Sept. 30.—Sch. <i>John Halifax</i> , survey on deckload.....	8 00
Dec. 15.—SS. <i>Imperial Transport</i> , survey, rivets leaking. ship strained.	8 00
" 17.—SS. <i>Imperial Transport</i> , " after repairs .....	8 00
" 11.—Sch. <i>Bravo</i> , survey ship ashore .....	8 00
" 18.—Sch. <i>Bravo</i> , " ship going to slip .....	8 00
	<hr/>
	\$112 00

Yours faithfully,  
DONALD J. MATHESON,  
Port Warden.

REPORT OF THE PORT WARDEN AT HALIFAX, N.S.

HALIFAX, N.S., January 2, 1914.

The Deputy Minister of Marine and Fisheries,  
Ottawa, Canada.

SIR,—I have the honour to submit my report for the year ending December 31,  
1913, accompanied by a statement, in duplicate, of the receipts and expenditures  
during that period.

Surveys have been held on thirteen steamers and four schooners, which arrived  
at this fort in a damaged condition during the year.

The necessary repairs were made to the vessels and those of them bound to other  
ports, proceeded to their destination, where they have safely arrived.

During the year ending December 31, 1913, there has been shipped from the port  
of Halifax, to the port of Liverpool, G.B., 647,134 bushels of wheat, 212,971 bushels  
of flax.

No live stock has been shipped from Halifax during the year 1913.

RECEIPTS AND EXPENDITURES of the port warden at Halifax, N.S., from January 1, 1913,  
to December 31, 1913.

Dr.		Cr.	
	\$ cts.		\$ cts.
To amount received as fees .....	2,736 14	By paid assistants and office ex- penses .....	1,435 36
		" Amount to port warden.....	1,300 78
	<hr/>		<hr/>
	2,736 14		2,736 14



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I hereby certify that the above is a true and correct statement of the receipts and expenditures of the port warden at Halifax, N.S., from January 1, 1913, to December 31, 1913.

NEIL HALL,  
*Port Warden.*

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REPORT OF MONCTON, N.B., PORT WARDEN.

MONCTON, N.B., January 7, 1914.

To the Honourable,

The Minister of Marine and Fisheries.

SIR,—In pursuance of the provisions of section 899, chapter 113 of the Canadian Shipping Act, I beg to submit my annual return for the year 1913 as port warden for the port of Moncton, N.B.

I beg to report that I have not been called in my official capacity during the year past, no casualties have occurred, or disputes of any kind arisen in the Port of Moncton.

Navigation closed December 27, 1913.

Receipts of office—nil.

I have the honour to be, sir,

Your obedient servant,

R. C. BACON,  
*Port Warden.*

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REPORT OF THE PORT WARDEN AT MONTREAL.

MONTREAL, QUE., January 7, 1914.

Honourable JOHN D. HAZEN,

Minister of Marine and Fisheries,  
Ottawa, Ont.

SIR,—I have the honour by direction of the council of this board and in compliance with section 31 of the Act governing the port warden's office, 45 Vic., chap. 45, to transmit herewith documents as follows:—

1. Port warden's annual report for the year 1913.
2. Audited statement of receipts and expenditures of the port warden's office for the year ending December 31, 1913.
3. Statement of investments of port warden's surplus funds.

I have the honour to be, sir,

Your obedient servant,

GEO. HADRILL,  
*Secretary.*



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## REPORT OF PORT WARDEN AT MONTREAL.

MONTREAL, December 31, 1913.

To the President and Council of the Montreal Board of Trade.

GENTLEMEN,—I have the honour to submit the annual report of the business of the port warden's office, with statement of exports, receipts and expenditure for the year 1913.

On Thursday, 10th April, 1913, the river was clear of ice as far as visible from Longue Pointe. The Richelieu and Ontario Companies' ferry steamers *Longueuil*, and *Boucherville* arrived in port.

Monday, 14th April, the ss. *Wacousta*, with cargo of coal from Sydney, C.B., arrived at Quebec.

Tuesday, 15th April, river was reported clear of ice from Montreal to Quebec.

Thursday, 17th April, gulf and river steamers arrive in port.

Saturday, 19th April, 8 p.m. ss. *Wacousta* arrived, first steamship from sea.

Monday, 21st April, the ss. *Sokoto*, the first foreign going steamship arrived.

Wednesday, 23rd April, the canals opened for traffic, when the general business of the port commenced.

The first steamship to enter the gulf of St. Lawrence by the strait of Belle Isle was the Thomson liner ss. *Devona*, which passed Point Amour inward at 8.30 a.m. on the 26th June.

The use of the strait of Belle Isle this season was not so universal or regular as in former years, owing to the uncertainty of the condition, (frequent reports having been received of numerous icebergs and fog prevailing in the straits).

During the season of 1912 the regular sailings of the liners were interfered with by the London Dock strikes, a number of the steamships being tied up in dock with their cargoes on board, this season the same thing has occurred, but not to the same extent, owing to the Dublic Dock strikes.

The only serious accident I have to report this season between Quebec and this port, is the grounding of the ss. *Mount Temple* off Maisonneuve, on 24th September; she was lightened and floated on 26th September, and having discharged all cargo, was put on the floating ship dock where temporary repairs were made, after which she reloaded and proceeded on her voyage.

The construction works in connection with the floating ship dock at Maisonneuve and the shipbuilding slips are progressing rapidly, and they will soon be in position to make permanent repairs on vessels of the largest tonnage.

The season of navigation closed on 29th November with the departure for sea of the ss. *Ruthenia* at 9 a.m. and the ss. *Morwenna* at 2.15 p.m., four days earlier than the close of the season of navigation for 1912.

A total of 478 foreign going steamships reported at this office this season, with a tonnage of 2,033,752 tons, against 415 vessels and 1,790,518 tons last season, an increase of 63 vessels and 243,234 tons.

The business to the lower ports this season consisted of: entered 349 vessels of all classes, with a tonnage of 647,903 tons, against 327 vessels and 617,236 tons, an increase of 22 vessels and 30,667 tons over last season.

Clearances of vessels loaded for the lower ports this season were 100 vessels of all classes, with a tonnage of 75,873 tons, against 104 vessels of 82,331 tons, a decrease of 4 vessels and 6,458 tons from last season.

The shipments of various kinds for the past season manifested and reported at this office are as per attached statements.

All of which is respectfully submitted.

ARCHIBALD REID,  
Port Warden.



SESSIONAL PAPER No. 21

COMPARATIVE STATEMENT of Shipments 1912 and 1913 as per manifests reported at the Port Warden's Office.

Description.	1913.	1912.	Increase 1913.	Decrease 1913.
Wheat ..... bush.	33,707,331	30,652,672	3,054,659	
Buckwheat..... s	5,208		5,208	
Peas..... "	22,732	19,813	2,919	
Barley..... "	5,188,228	1,217,548	3,970,680	
Oats..... "	7,325,713	6,565,138	760,575	
Corn..... "	50,820		50,820	
Flaxseed..... "	7,929,115	69,066	7,860,049	
Rye..... "	210,804	126,313	84,491	
	54,439,951	38,650,550	15,789,401	
Total increase for the year 1913 .....			15,789,401	
Flour and meal..... brls.	1,915,587	1,761,727	153,860	
Ashes..... "	336	415		79
Apples..... "	222,814	328,788		105,974
Cheese..... boxes	1,577,013	1,722,950		145,937
Butter..... pkgs.	1,728	70	1,658	
Eggs..... "				
Boxmeats..... "	162,278	190,601		28,323
Lard..... "	702,276	700,645	1,631	
Pulp..... tons.	6,521	6,645		124
Paper..... "	13,367	22,636		9,270
Sundries..... "	138,455	121,723	16 732	
Hay .. .. "	18,067	39,698		21,631
Oilcake..... "	19,546	25,609		6,063
Minerals..... "	24,644	16,099	8,545	
Dried grains..... "	873	732	141	
Lumber..... ft. b.m.	97,890,047	101,400,889		3,510,842
Cattle..... head	514	6,473		5,959
Horses and mules..... "	231	481		250
Sheep..... "	269	178	118	

STATEMENT of Oversea or Foreign-going Vessels.

Description.	1913.		1912.	
	No.	Tons.	No.	Tons.
Steamers.....	478	2,033,752	415	1,790,518

Increase of 63 vessels and 243,234 tons.

STATEMENT of Lower Port Arrivals.

Description.	1913.		1912.	
	No.	Tons.	No.	Tons.
Steamers' .. ..	302	643,536	291	613,826
Sailing vessels.....	47	4,367	36	3,410
	349	647,903	327	617,236

Increase of 22 vessels and 30,667 tons.



CLEARANCES for Lower Ports.

Description.	1913.		1912.	
	No.	Tons.	No.	Tons.
Steamers.....	81	74,058	84	80,438
Sailing vessels.....	19	1,815	20	1,893
	100	75,873	104	82,331
Decrease of 4 vessels and 6,458 tons.				
Revenue, 1912.....				\$9,864 24
Revenue, 1913.....				9,711 98
Decrease.....				152 26











## SESSIONAL PAPER No. 21

## REPORT OF THE PORT WARDEN OF THE PORT OF NANAIMO, B.C.

NANAIMO, B.C., January 2, 1914.

ALEXANDER JOHNSTON, Esq.,  
Deputy Minister of Marine and Fisheries,  
Ottawa.

SIR,—I have the honour to submit my report of collections made as port warden for the port of Nanaimo, and Departure bay during the past year.

Total amount collected for surveys on vessels .. .. .	\$27 00
By amount paid for assistance.. .. .	6 00
	<hr/>
Balance.. .. .	\$21 00

I am, sir, your obedient servant;

J. S. KNARSTON,  
*Port Warden.*

## REPORT OF THE PORT WARDEN AT NORTH SYDNEY, N.S.

ALEXANDER JOHNSTON, Esq.,  
Deputy Minister of Marine and Fisheries,  
Ottawa.

SIR,—I herewith present my annual report.

## SEAWORTHY CERTIFICATES.

SS. *Sargasso*, *Waimate*, *Serrana*, *Cardovia*, *Grenada*, *Lena*, *Aldershot*, *McElwin*,  
*Santaren*, *Lorland*, *Laba*; schooners *Maple Leaf* and *Carmalee*.  
Total amount, \$116.

Yours respectfully,

W. H. KELLY,  
*Port Warden.*

## REPORT OF THE PORT WARDEN OF PORT HAWKESBURY.

PORT HAWKESBURY, January 2, 1914.

A. JOHNSTON, Esq.,  
Deputy Minister of Marine and Fisheries,  
Ottawa.

SIR,—I have the honour to submit my annual report of the doings of this office with a statement of the fees collected by me and also the attendant expenses during the past year.

I have the honour to be, sir,

Your obedient servant,

NICHOLAS MARTIN.



5 GEORGE V., A. 1915

1	survey on steamer	<i>Golden City</i>	.. . . .	\$18 00
4	surveys on schooner	<i>Roseway</i>	.. . . .	39 00
1	survey on schooner	<i>Maud Carter</i>	.. . . .	5 00
1	"	"	<i>Una</i>	5 00
1	"	"	<i>Blake</i>	18 00
1	"	"	<i>Albert A. Young</i>	18 00
				<hr/> \$103 00
Paid J. J. Hennesey, master mariner.. . . .				\$27 00
" John Langley, master shipwright.. . . .				17 00
" Edward Dorley, master shipwright.. . . .				5 00
				<hr/> \$ 49 00
Balance.. . . .				54 00
				<hr/> \$103 00

Amount reverting to port warden, \$54.

I hereby certify the above to be correct to the best of my knowledge and belief.

NICHOLAS MARTIN,  
*Port Warden.*

REPORT OF THE PORT WARDEN OF PRINCE EDWARD ISLAND.

CHARLOTTETOWN, P.E.I., April 14, 1914.

A. JOHNSTON, Esq.,  
Deputy Minister of Marine and Fisheries,  
Ottawa.

SIR,—I beg to present you the report of the port warden for Prince Edward Island for the year ending December 31, 1913.

Kindly excuse the crude way I make out this report, for I hardly know what the department requires.

To	survey	on	damaged	iron,	September 9.. . . .	\$ 3 00
"	"	"	"	dry goods,	September 14.. . . .	1 50
"	"	"	"	repairs,	November 21.. . . .	4 00
"	"	"	"	bulkheads,	October 1.. . . .	4 00
						<hr/> \$12 50

I am, sir,  
Your obedient servant,  
GEORGE H. HOLBROOK,  
*Port Warden.*

REPORT OF THE QUEBEC PORT WARDEN.

QUEBEC, December 30, 1913.

A. JOHNSTON, Esq.,  
Deputy Minister of Marine and Fisheries,  
Ottawa.

SIR,—As requested by the thirtieth section of the port warden's rules, I beg respectfully to submit the following annual statement of the business transacted in this office, during the year ending December 31, 1913.



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Forty-seven steamers were surveyed for clearance outwards, after taking part cargo on board at this port, having previously shipped part cargo of grain and other goods at Montreal.

Ninety steamers were surveyed, their hatches opened and cargoes examined, on their arrival from sea. Three steamers and one yacht were surveyed on account of collision damage.

Five steamers and two steam barges were surveyed on account of grounding and stranding in the river St. Lawrence, below and above Quebec.

Two steamers were surveyed and value estimated for general average purposes.

Four steamers and one steam barge were surveyed for sundry damage.

Nine surveys were held on damaged goods.

The receipts and disbursements of this office are as follows:—

Receipts.. . . .	\$ 1,341 10
Expenses.. . . .	284 00
	<hr/>
	\$ 1,057 10

With much respect, I remain,

Your obedient servant,

ALEX. RUSSELL,

*Port Warden.*

## REPORT OF THE PORT WARDEN OF THE PORT OF ST. ANDREWS, N.B.

ST. ANDREWS, N.B., January 12, 1914.

A. JOHNSTON, Esq.,

Deputy Minister of Marine and Fisheries,  
Ottawa.

SIR,—I beg to submit my annual report of the work performed by me during the past year, ending December 31, 1913, in the capacity of port warden for the year.

April 4, surveyed hatches schooner *Anne C. Were*, Captain A. P. Ward, from Boston, with cargo of fertilizer. Found hatches properly caulked, battened, and cargo in good order under hatches.

April 4, surveyed hatches, schooner *Suella*, from Boston, Captain Scott, master. The cargo was fertilizers. I found hatches properly secured and cargo in good order under hatches.

Fees collected, \$5.

I am, sir,

Your obedient servant,

JOHN WREN,

*Port Warden.*

## PORT WARDEN'S REPORT OF SYDNEY, N.S., INTERNATIONAL PIER.

INTERNATIONAL PIER, January 9, 1914.

A. JOHNSTON, Esq.,

Deputy Minister, Marine and Fisheries,  
Ottawa.

DEAR SIR,—I herewith beg to hand you my report for the year ending December 31, 1913. I have the honour to remain,

Your obedient servant,

NELSON H. TOWNSEND.

PER J. MC.



5 GEORGE V., A. 1915

Date.	Vessel's Name.	Registered Tonnage.	Amount of Fees.	
1913.			\$	cts.
April 26..	Corunna .....	792	8	00
" 30..	Nevada.....	744	8	00
May 3..	Brynhild.....	1,843	8	00
" 13..	Prince Rupert.....	1,172	8	00
" 14..	Fairnead.....	1,432	8	00
" 19..	Tokoto.....	1,969	8	00
" 23..	Hormount.....	1,230	8	00
" 27..	Glenmount.....	1,246	8	00
June 2..	Corunna.....	792	8	00
" 4..	Mountsfield .....	1,547	8	00
" 6..	Lincluden.....	2,455	8	00
" 10..	Benguela.....	3,533	8	00
" 13..	Malmstad .....	2,599	8	00
" 17..	Prince Rupert.....	1,172	8	00
" 17..	Nevada.....	744	8	00
" 17..	Almeriana.....	1,829	8	00
" 19..	Arcidaca Thefano.....	2,268	8	00
" 23..	Bonlama.....	1,624	8	00
" 23..	Navigator.....	797	8	00
" 26..	Thormount.....	1,230	8	00
" 26..	Corunna.....	792	8	00
July 2..	Glenmount.....	1,246	8	00
" 2..	Lingfield .....	2,614	8	00
" 8..	Herman Weidel Jarlsberg.....	1,941	8	00
" 8..	Malmanger.....	858	8	00
" 10..	Myrtle Holme .....	1,600	8	00
" 16..	Prince Rupert.....	1,172	8	00
" 19..	Corunna .....	792	8	00
" 22..	Bjongvin.....	1,785	8	00
" 29..	Thormount .....	1,230	8	00
" 29..	Nevada.....	744	8	00
Aug. 1..	Glenmount .....	1,246	8	00
" 6..	Trold.....	2,036	8	00
" 8..	Hildswell.....	1,610	8	00
" 13..	Corunna.....	792	8	00
" 14..	Newton Hall.....	2,678	8	00
" 16..	Prince Rupert.....	1,172	8	00
" 18..	Almeriana.....	1,824	8	00
" 25..	Vinland .....	662	8	00
" 28..	Kadona.....	2,308	8	00
" 28..	Guernsey.....	2,808	8	00
" 29..	Kinmount.....	1,597	8	00
Sept 2..	Glenmount.....	1,246	8	00
" 4..	Fairmount.....	1,383	8	00
" 5..	Nevada.....	744	8	00
" 8..	Westmount.....	1,175	8	00
" 15..	Eir.....	2,448	8	00
" 17..	Prince Rupert.....	1,172	8	00
" 19..	Corunna.....	792	8	00
" 23..	Stormount .....	1,230	8	00
" 23..	Bender.....	2,820	8	00
Oct. 4..	Glenmount.....	1,246	8	00
" 10..	Nevada.....	744	8	00
" 14..	Thyra Menier.....	794	8	00
" 17..	Astarte.....	717	8	00
" 20..	Grindon Hall.....	2,365	8	00
" 20..	Dwina .....	691	8	00
" 21..	Jommerstad .....	2,508	8	00
" 21..	Georgia B. Jenkins.....	398	8	00
" 23..	Corunna.....	792	8	00
" 24..	Knutsford.....	2,489	8	00
" 24..	Putney Bridge.....	2,147	8	00
" 27..	Thormount.....	1,230	8	00
" 31..	Port Colburne.....	1,305	8	00
" 31..	Karamea.....	3,553	8	00



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Date.	Vessel's Name.	Registered Tonnage.	Amount of Fees.	
1913.			\$	cts.
Nov. 5..	Benguela .....	3,533	8	00
" 8..	Queen Wilhelmina .....	2,306	8	00
" 16..	Nevada .....	744	8	00
" 16..	Prince Rupert .....	1,172	8	00
" 18..	Nor .....	878	8	00
" 21..	Bnatland .....	1,473	8	00
Dec. 1..	Berni .....	2,787	8	00
" 6..	Margerete Gelpcki .....	1,073	8	00
" 18..	Tyr .....	1,442	8	00
" 29..	Kwarra .....	2,303	8	00
		116,025	600	00

REPORT OF THE PORT WARDEN OF VICTORIA AND ESQUIMALT, B.C.

VICTORIA, B.C., January 5, 1914.

A. JOHNSTON, Esq.,  
Deputy Minister of Marine and Fisheries,  
Ottawa.

SIR,—I have the honour of submitting herewith my report as port warden for the ports of Victoria and Esquimalt, B.C., for the year ending December 31, 1913.

Amount of fees received for surveys on hatches and cargoes of vessels, \$432.50.

I have the honour to be, sir,

Your obedient servant,

CHAS. E. CLARKE,  
Port Warden.

REPORT OF THE PORT WARDEN, YARMOUTH, N.S.

A. JOHNSTON, Esq.,  
Deputy Minister of Marine and Fisheries,  
Ottawa.

SIR,—I have the honour to submit my annual report for the year ending December 31, 1913.

1913.		\$	cts.
Jan. 13....	To survey tugboat <i>Gertrude M</i> .....	5	00
Mar. 29....	" 2 surveys Yarmouth harbour. ....	17	50
April 6....	" schooner <i>Agney G. Donko</i> , leaking, 2 surveys. ....	16	00
May 26....	" Norwegian ship <i>Frew</i> stranded lower harbour. ....	12	00
" 31....	" total loss ship <i>Frew</i> on Fundy Point, Yarmouth. ....	13	00
" 7....	" SS. <i>Boston</i> stranded Kelley Cove .....	13	00
June 4....	" SS. <i>Gerald Turnbull</i> stranded on Gannet rock dry ledge and was total loss..	25	00
Aug. 30....	" SS. <i>Boston</i> struck on passage from Boston to Yarmouth .....	10	00
Sept. 10....	" SS. <i>Yarmouth</i> stranded Point Digby Gut from St. John, N.B.. ....	25	00
Dec. 24 ...	" Norwegian bark <i>Poposo</i> struck foul ground, Sallows rock, Yarmouth har- bour, 2 surveys. ....	16	00
		152	50

I am, sir,

Your obedient servant,

R. W. FERGUSON,  
Port Warden.



APPENDIX No. 15.

PILOTAGE REPORTS, 1913.

Annual Reports of Pilotage Authorities for the Year 1913. A Summary of Information contained in following Pilotage Reports.

Pilotage District.	Number of Commissioners	Number of Pilots.	Number of Apprentice Pilots.	Number of Vessels paid Pilotage.	Total Receipts. \$ cts.	Amount paid Pilots. \$ cts.	Expenses paid by Pilot Authority. \$ cts.	Remarks.
Baie Verte, N.B. . . . .	4	3	None.	8	504 00	478 80	25 20	
Bathurst, N.B. . . . .	3	3	"	16	451 17	451 17		
Bras d'Or, N.S. . . . .	3	7	"	Not given.	Not given.	Not given.	Not given.	
Buctouche, N.B. . . . .	4	3	"	2	65 00	65 00		
Caraquet, N.B. . . . .	5	9	"	9	66 60	66 60		
Charlotte County, N.B. . . . .	3	1	"	11	200 00	200 00		
Halifax, N.S. . . . .	6	18	4	1,094	46,133 23	41,880 35	3,526 98	Balance in fund for 1913, \$2,413.35.
Harvey and Alma, N.B. . . . .	3	3	None.	18	802 69	697 69		
Louisburg, N.B. . . . .	5	8	"	158	5,643 88	4,748 00	\$95 88	Maintenance of boats, \$105.
Minas Basin, N.S. . . . .	4	None.	"	"	Not given.	Not given.	Not given.	No pilots appointed.
Miramichi, N.B. . . . .	5	17	"	"	13,825 39	11,638 20	2,187 19	See amount paid each pilot in the report, from fund.
Montreal, P.Q. . . . .	Minister of Marine and Fisheries.	51	19	1,237	106,955 33	Not given.	Not given.	
Nanaino, B.C. . . . .	5	7	None.	423	16,371 43	13,596 11	2,775 32	Boat hire, wages, station supplies were paid.
New Westminster, B.C. . . . .	3	1	"	28	1,036 22	.....	.....	One pilot only. Paid \$150 per month by city corporation.
Parrsborough, N.S. . . . .	3	1	"	6	393 50	365 97	27 53	
Pictou, N.S. . . . .	5	3	"	43	1,413 63	1,391 42	22 21	
Port Medway, N.S. . . . .	3	2	"	2	40 00	40 00		
Prince County, P.E.I. . . . .	2	2	"	No account.	Not given.	Not given.		
Pugwash, N.S. . . . .	5	5	"	8	668 26	668 26		
Quebec, P.Q. . . . .	Minister of Marine and Fisheries.	70	22	1,017	152,612 84	125,850 00	32,015 79	Expenditure by P. authority includes pensions out of funds.
Restigouche, N.B. . . . .	5	6	None.	114	6,940 08	6,377 99	562 09	
Richibucto, N.B. . . . .	5	4	"	5	354 00	350 00	4 00	
Shepody Basin, N.B. . . . .	5	4	"	61	1,401 78	1,401 78		



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Shediac, N.B.....	5	3	6	388 45	380 69	7 76	Expenditure includes pensions.  Expenditure from Fund. Balance in bank, \$2,990.41. Surplus left from 1913, \$1,588 04. The receipts include \$1,200 for P. licenses.
St. Ann's, N.S.....	3	4	18	786 00	786 00	3,718 38	
St. John, N.B.....	7	18	506	36,312 43	32,594 05		
St. Mary's, N.S.....	4	Not given.	Not given.				
Sydney, N.S.....	6	32	1,013	40,540 37	40,540 37	3,733 05	
Vancouver, B.C.....	5	7	947	43,433 33	29,041 89	13,423 93	
Victoria and Esquimalt, B.C...	5	4	522	18,375 90	15,597 85	2,778 05	
Wallace .....	3	2	Nil.	Nil.	Nil.		
	124	298	7,393	495,715 56	329,208 19		

NOTE.—Amount paid Montreal pilots not given.



5 GEORGE V., A. 1915

ANNUAL REPORTS OF PILOTAGE AUTHIORITYES FOR THE YEAR 1913.

OFFICE OF THE GENERAL SUPERINTENDENT OF PILOTAGE FOR CANADA,

OTTAWA, May 1, 1914.

A. JOHNSTON, Esq.,  
Deputy Minister of Marine and Fisheries,  
Ottawa.

SIR,—I have the honour to forward herewith the annual reports of the different Pilotage Authorities throughout the Dominion, which have been forwarded to the department in accordance with section 441 of chapter 113, of the Revised Statutes of Canada, 1906, for the year 1913.

I regret to have to report the position of superintendent of pilots of the Montreal Pilotage District has been made vacant by the death of Captain James J. Riley on January 8 last, after a very short illness.

I am, sir, your obedient servant,

H. ST. G. LINDSAY,  
*Acting General Superintendent.*

REPORT OF THE PILOTAGE COMMISSIONERS OF THE PILOTAGE DISTRICT OF BAIE VERTE AND PORT ELGIN, N.B.

PILOTAGE COMMISSIONERS.

Names.	When Appointed.
Jacob Allen .....	O. C. June 25, 1901.
Ignatius Murphy.....	O. C. " 15, 1912.
Louis Gould.....	O. C. " 15, 1912.
Wm. Farquharson .....	O. C. " 15, 1912.

The rates of pilotage for the time being in force in this district are : Steamers, \$2 per foot inward, \$2 per foot outward ; sailing vessels, \$1.50 per foot inward, \$1.50 per foot outward.

NAMES OF PILOTS AND EARNINGS.

Names.	Age.	Amount earned.	Amount paid to Pilots.
		\$	\$ cts.
Jacob E. Allen.....	48	252 00	239 40
Nelson Tucker.....	42	252 00	239 40
Rob't. Anderson.....			
		504 00	478 80

No white flag ships licensed during the year.



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STATEMENT OF VESSELS WHICH PAID PILOTAGE FEES FOR THE YEAR.

No.	Nationality.	Tonnage.	Amount paid.
			\$ cts.
5	British steam vessels .....	1,212	325 00
1	British sailing vessels .....	516	53 00
2	Foreign steam vessels .....	2,683	126 00

Receipts—	Expenditure —
Pilotage dues..... \$504 00	Expenses—boats..... \$100 00

Pilotage Boats.	Cost of Maintenance.
	\$ cts.
No. 1 .....	50 00
No. 2 .....	50 00

Navigation opened on April 15, and closed January 1, 1914.

CAPE TORMENTINE, N.B., January 15, 1914.

WM. FARQUHARSON,  
Secretary.

REPORT OF THE PILOTAGE COMMISSIONERS OF THE DISTRICT OF BATHURST, N.B.

PILOTAGE COMMISSIONERS.

Name.	When appointed.
Henry White.....	O. C. Sept. 20, 1904.....
Thomas Canty .....	O. C. Aug. 30, 1907.....
John J. S. Hashey .....	O. C. May 16, 1903. ....

The rates of pilotage for the time being in force in this district are as follows :—

SAILING VESSELS.

Inwards : To the forks of the channel .....	\$1 20 per foot
" above said forks.....	1 40 "
Outwards : From below the forks .....	80 "
" above the forks .....	1 00 "

STEAMERS.

In addition to the rates paid by sailing vessels, steamers shall pay one cent per registered or net ton, inwards or outwards ; but shall not be required to pay the additional fee both ways.

The fees for moving a vessel, whether sail or steam, shall be as follows :—

From the ballast ground to loading berth.....	\$4 00
From one loading berth to another.....	4 00



5 GEORGE V., A. 1915

NAMES OF PILOTS AND EARNINGS.

Name.	Earnings.
	\$ cts.
William Daly.....	190 89
D. R. Ronalds.....	190 89
Peter Roy.....	69 39
	451 17

STATEMENT of Vessels which paid Pilotage during the year.

No.	Nationality.	Tonnage.	Amount paid.
			\$ cts.
4	British steam vessels, 2 tugs and 2 dredges.....		58 61
5	" sailing ".....	1,569	132 60
7	Foreign steam ".....	4,905	259 76
			450 97

RECEIPTS AND EXPENDITURE.

Receipts.	\$ cts.	Expenditures	\$ cts.
Received pilotage as per statement....	451 17	Paid for inspection of boats.....	3 00
		Paid pilots.....	425 67
		Paid commissioners and secretary.....	22 56
	451 17		451 23

Pilotage boats—No. 1, No. 2 and No. 3, besides having motor power have sails.

Navigation opened April 26, and closed December 17, 1913.

JOSEPH HENDERSON,  
Secretary.

BATHURST, N.B.,  
March 10, 1914.



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REPORT OF THE PILOTAGE COMMISSIONERS OF THE PILOTAGE DISTRICT OF BRAS D'OR LAKES, N.S.

PILOTAGE COMMISSIONERS.

Names.	When Appointed.
Captain Daniel McRae.....	O. C. August 31, 1906.
Donald H. McRae.....	O. C. August 31, 1906.
George Hallifield .....	O. C. August 31, 1906.

The rates of pilotage in force in this district are as follows :—

SCALE of Pilotage Fees for the Pilotage District embracing the ports, harbours and bays in Bras d'Or Lakes in the Great and Little Bras d'Or belonging to the County of Victoria.

Tonnage.	Big Bras d'Or	Port Devis.	St. Ann's.	Little Narrows.	Grand Narrows to bound- ary line of District.	Baddeck.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.	\$ cts.
120—200.....	5 00	7 00	7 00	11 00	12 50	8 00
200—250.....	6 00	8 00	8 00	14 00	14 50	11 00
250—300.....	7 00	9 00	9 00	16 00	16 50	12 00
300—350.....	8 00	12 00	12 00	17 00	17 00	12 00
350—400.....	9 00	12 00	12 00	18 00	18 00	13 00
400—450.....	11 00	14 00	14 00	19 00	19 50	15 00
450—500.....	11 00	14 00	14 00	19 00	19 50	15 00
500—600.....	12 00	15 00	15 00	19 00	20 00	16 00
600—700.....	13 00	16 00	16 00	20 00	21 00	17 00
700—800.....	14 00	17 00	17 00	21 00	22 00	18 00
800—900.....	15 00	18 00	18 00	22 00	23 00	19 00
900—1,000.....	16 00	19 00	19 00	23 00	24 00	20 00
1,000—1,500.....	18 00	21 00	21 00	24 00	25 50	22 00
1,500—2,000.....	21 00	24 00	24 00	26 00	27 50	25 00

NAMES AND AGES OF PILOTS.

No.	Name.	When appointed.	Age.
1	Archie Livingstone.....	1894	65
2	Daniel Campbell.....	1894	50
3	George McKay.....	1894	60
4	William Carcy.....	1895	62
5	Ingraham Carcy.....	1897	44
6	Nicholas Murphy.....	1909	53
7	C. S. McNeil.....	1913	44

Navigation opened in April, 1913, closed February 11, 1914.

BADDECK, N.S.,  
March 18, 1914.

GEORGE HALLIFIELD,  
*Secretary.*



5 GEORGE V., A. 1915

REPORT OF THE PILOTAGE COMMISSIONERS OF THE PILOTAGE DISTRICT OF BUCTOUCHE, N.B.

PILOT COMMISSIONERS.

Names.	When appointed.	Changes.
John C. Ross.....	O. C. April 28, 1877.....	Died Sept., 1913.
R. H. Foley.....	O. C. " 28, 1877.....	
James McNairn.....	O. C. " 28, 1877.....	
D. T. Landry.....	O. C. July 2, 1887.....	

NAMES OF PILOTS AND AGES.

Names.	Ages.	When appointed.
Joseph Crossman .....	62	1898
John Mooney.....	39	1907
Peter A. Smith.....	47	1907

VESSELS WHICH PAID PILOTAGE DURING THE YEAR.

No.	Nationality.	Tonnage.	Amount paid.
1	British vessel, tow boat.....	.....	\$ 30 00
1	Foreign vessel.....	350	35 00
			65 00

Pilotage fees are charged as per section 12 of rules and regulations for this district, viz.: one dollar and fifty cents per foot draught of water, both inward and outward bound.

No other compulsory charge in respect to pilotage. When a vessel is taken by pilot over the reef from anchorage ground outside the bar, the charge is five dollars ; but this is not compulsory.

BUCTOUCHE, N.B.

N. J. ROSS,  
Secretary.



SESSIONAL PAPER No. 21

REPORT OF THE PILOTAGE COMMISSIONERS OF THE PILOTAGE DISTRICT OF CARAQUET, N.B.

PILOTAGE COMMISSIONERS.

Names.	When appointed.
C. Hubbard.....	O. C. Nov. 11, 1881.
Geo. La Richie.....	O. C. April 6, 1903.
H. Duguay.....	O. C. June 29, 1910.
Charles L. Robichaud.....	O. C. June 20, 1910.
Peter J. Viott.....	O. C. July 7, 1913.

The rates of pilotage for the time being in force in this district are : one dollar and twenty cents a foot inwards, one dollar a foot outwards.

NAMES OF PILOTS, ETC.

Name.	Appointed.	Age.	Earnings.
			\$ cts.
Alex. J. Wilson .....	1897	39	60 60
L. Gauvin .....			6 00
M. LeBouthillier .....			
Charles Vibert .....			
Edward LeBouthillier.....			
Joseph E. LeBouthillier .....			
Pierre E. Bouthillier .....			
James Lantegne .....			
Joseph Chiasson .....			
			66 60

VESSELS WHICH PAID PILOTAGE DURING YEAR.

Number.	Nationality.	Tonnage.
3	British sailing vessels .....	225
1	Foreign steam vessel .....	1,501
5	Foreign sailing vessels .....	719

RECEIPTS AND EXPENDITURES.

<i>Receipts—</i>		<i>Expenditures —</i>	
L. Gauvin.....	\$1 00	Stationery and expenses .....	\$6 00
Theotime Le Bouthillier.....	1 00		
Charles Vibert .....	1 00		
A. J. Wilson.. ..	1 00		
James Lantegne.....	1 00		
Joseph Chiasson....	1 00		
	<hr/> \$6 00		<hr/> \$6 00

Navigation opened May 1 and closed December 15, 1913.

Caraquet, N.B., February 2, 1914.

C. HUBBARD,  
*Secretary.*



REPORT OF THE PILOTAGE COMMISSIONERS OF THE PILOTAGE DISTRICT OF CHARLOTTE  
COUNTY, N.B.

PILOTAGE COMMISSIONERS.

Names.	When appointed.
Samuel Johnson.....	O. C. April 2, 1874.
Jesse Duston.....	O. C. June 8, 1901.
R. H. Keay.....	O. C. February 19, 1907.

Joseph Boyd, the only pilot here, earned \$200 during the year  
There were eleven foreign sailing vessels paid pilotage amounting to \$200 during the year.  
Navigation is open the whole year round.

St. Andrews, Charlotte County, N.B., April 16, 1914.

R. H. KEAY,  
*Secretary.*

REPORT OF THE PILOTAGE COMMISSIONERS OF THE PILOTAGE DISTRICT OF HALIFAX, N.S.

PILOTAGE COMMISSIONERS.

Names.	When Appointed.
M. C. Grant .....	O. C. 20 June, 1892.
J. J. Bremner .....	O. C. 19 March, 1883.
James Hall.....	Appointed by Chamber of Commerce, 27 July, 1904.
Neil Hall .....	" " " 26 November, 1908.
J. E. De Wolf.....	" City Council, 16 May, 1908.
F. G. Rudolph.....	O. C. 1 October, 1909.

The rates of pilotage at present in force in this district are :—

	Inward.	Outward.
Canadian vessels of 120 tons and under.. . . . .	Free.	Free.
Vessels under 200 tons .....	\$ 9 60	\$ 6 00
" of 200-300.....	13 20	8 40
" 300-400.....	16 80	10 80
" 400-500.....	19 20	12 00
" 500-600.....	21 60	13 20

Vessels of 600 tons and over, sixty cents for every 100 tons additional, or fraction thereof, inwards, and thirty cents outwards.  
Outward pilotage for all vessels of 200 tons and upwards, compulsory.



SESSIONAL PAPER No. 21

NAMES OF PILOTS AND EARNINGS.

No.	Names.	When appointed.	Age.	Earnings.
				\$ cts.
	<i>Boat No. 1—</i>			
6	Frank Thomas.....	1898	36	
7	Bernard Brackett.....	1905	31	
8	William Hayes.....	1898	38	
9	Wallace Bracket.....	1911	27	
10	John Holland..	1905	31	20,499 20
17	William Gorman ..	1898	40	
18	Charles F. Martin.....	1890	45	
21	Thomas Reyno.....	1884	52	
23	Henry Latter.....	1890	43	
	<i>Boat No. 2—</i>			
2	James G. Renner.....	1911	28	
3	Lamont Power ..	1911	25	
5	L. Hayes.....	1905	34	
11	Edward Renner.....	1911	26	
14	John Hayes ..	1875	62	21,381 15
15	James Spears.....	1882	56	
19	William White.....	1884	54	
20	Thomas Hayes ..	1884	53	
22	Frank Mackey.....	1898	40	

NAMES OF APPRENTICE PILOTS AND EARNINGS.

Names.	When appointed.	Age.	Earnings.
W. Latter.....	1912	23	
C. Hanrahan.....	1912	23	\$592.00
John Brown.....	1912	21	
Walter White.....	1912	23	

STATEMENT OF VESSELS WHICH PAID PILOTAGE FEES FOR THE YEAR.

No.	Nationality.	Tonnage.	Amount paid.
			\$ cts.
934	British steam vessels.....	2,013,496	39,665 85
60	British sailing vessels.....	20,525	1,215 90
87	Foreign steam vessels ..	261,232	4,875 50
13	Foreign sailing vessels.....	3,304	207 30
			45,964 55

STATEMENT OF PENSION OR RELIEF FUND.

Dominion Savings Bank.....	\$ 10,328 23
Dominion bank stock..	9,212 36
Deposit receipts.....	18,214 75
Royal bank of Canada (current account)....	430 70
	38,186 04



RECEIPTS AND EXPENDITURES.

Receipts—

Balance, Jan. 1st, 1913.....	\$ 1,687 35
Pilotage fees.....	44,540 30
Outward pilotage.....	1,424 25
Commission ..	168 78
	<hr/>
	47,820 68

Expenditures—

Paid Pilots.....	\$41,880 35
" Superannuation.....	1,420 96
" Expenses.....	664 06
" Apprentices.....	392 00
" Auditor.....	50 00
" Secretary ..	999 96
Balance, Dec. 31, 1913.....	2,413 35
	<hr/>
	47,820 68

The pilot boats are maintained by the pilots.  
Navigation is open the year round.

HALIFAX, N.S.,  
February 9, 1914.

J. W. ORICHTON,  
Secretary.

REPORT OF THE PILOTAGE COMMISSIONERS OF THE PILOTAGE DISTRICT OF HARVEY AND ALMA,N.B.

COMMISSIONERS.

Names.	When appointed.
M. C. Anderson ..	O. C. June 29, 1901.
Rainsford Butland ..	O. C. March 16, 1912.
Ira Copp.....	O. C. March 16, 1912.

The Rates of Pilotage for the time being in force in this district, are as follows:

- Port of Harvey inwards, one cent per registered ton.
- Port of Harvey outwards, one and one-half cents per registered ton.
- Port of Alma inwards, one and one-half cents per registered ton.
- Port of Alma outwards, one and three-quarter cents per registered ton.

No.	Names of Pilots.	When appointed.	Age.	Amount earned.
				\$ cts.
1	Captain Arthur Edgett.....	April 8, 1913.....	52	314 62
2	David Alexander.....	April 8, 1913.....	58	210 96
3	Captain Medford Dixon ..	April 8, 1913.....	32	277 11
				<hr/>
				802 69

There are no apprentices in this district.  
No white flag ships were licensed during the year.



SESSIONAL PAPER No. 21

STATEMENT of vessels which paid pilotage during the year.

No.		Tonnage.	Amount paid.
			\$ cts.
7	British steam vessels .....	10,955	290 97
8	Foreign steam vessels .....	14,453	430 72
3	Foreign sailing vessels .....	1,211	81 00
			802 69

Pilotage boats and statement of cost.—

Bertha .....	\$50 00
No. 1 boat .....	30 00
No. 2 " .....	25 00

Navigation opened March 15 and closed January 15, 1913.

NEW HORTON, N.B.,  
January 7, 1914.

M. C. ANDERSON,  
*Secretary.*

REPORT OF THE PILOTAGE COMMISSIONERS OF THE PILOTAGE DISTRICT OF LOUISBOURG, N.S.

PILOTAGE COMMISSIONERS.

Name.	When Appointed.
Thomas Townsend .....	O. C. Sept. 10, 1898.
W. W. Lewis .....	O. C. " Feb. 25, 1907.
Michael Pope .....	O. C. Sept. 26, 1908.
John Dickson .....	O. C. May 28, 1911.
Daniel Townsend .....	

The Rates of Pilotage Dues in force in this District are as follows :

	Inward.	Outward.
On sail and steamship of 80 tons to 120. ....	\$ 4 00	\$ 3 00
" " 120 " 200. ....	6 00	4 00
" " 200 " 300. ....	7 00	5 00
" " 300 " 400. ....	8 00	6 00
" " 400 " 500. ....	10 00	8 00
" " 500 " 700. ....	11 00	9 00
" " 700 " 1,000. ....	13 00	11 00
" " 1,000 " 1,500. ....	15 00	12 00
" " 1,500 " 2,000. ....	16 00	14 00
" " 2,000 " 2,500. ....	18 00	16 00
" " 2,500 " 3,000. ....	22 00	18 00



NAMES OF PILOTS AND EARNINGS.

No.	Name.	When Appointed.	Age.	Amount Earned.
1	Pierce Pope.....	May 7, 1912.....	41	\$ 593 50
2	Thomas Wilcox.....	" 7, 1913.....	50	593 50
3	John Power.....	" 7, 1912.....	53	593 50
4	J. E. Tutty.....	" 7, 1913.....	54	593 50
5	W. H. Townsend.....	" 7, 1913.....	68	593 50
6	Wm. Williams.....	" 7, 1912.....	45	593 50
7	Lewis Tutty.....	" 7, 1913.....	44	593 50
8	John Kelly.....	Mar. 1, 1913.....	52	593 50
				4,748 00

There are no apprentices in this district.  
No white flag ships were licensed in the year.

STATEMENT OF VESSELS WHICH PAID PILOTAGE DURING THE YEAR.

No.	Nationality.	Tonnage.	Amount Paid.
			\$ cts.
117	British steam vessels.....	227,338	4,157 70
11	" sailing vessels.....	2,855	114 20
28	Foreign steam vessels.....	62,467	1,050 98
2	" sailing vessels.....	575	30 00
158			5,352 88

Receipts.		Expenditures.	
	\$ cts.		\$ cts.
British steam vessels.....	4,157 70	Commission and stationery.....	206 32
" sailing vessels.....	114 20	Other bills to maintain service.....	689 56
Foreign steam vessels.....	1,050 98	Paid pilots.....	4,748 00
" sailing vessels.....	30 00		
Docking ships.....	96 00		
Taking orders to ships.....	40 00		
Detained on quarantine.....	30 00		
Coast piloting.....	125 00		
	5,643 88		5,643 88

There are seven pilot boats ready for use.  
Navigation is open all the year round.

THOMAS TOWNSEND,  
Secretary.

LOUISBURG, C.B., December 31, 1913.



## SESSIONAL PAPER No. 21

REPORT OF THE PILOTAGE COMMISSIONERS OF THE PILOTAGE DISTRICT OF MINAS BASIN AND  
AVONPORT, N.S.

## PILOTAGE COMMISSIONERS.

Names.	When appointed.
Captain Stephen Smith .....	O. C. April 9, 1907.
Captain R. Lawrence.....	O. C. Feb. 26, 1910.
Brenton Borden.....	O. C. April 9, 1907.
Capt. William McCullough.....	O. C. April 24, 1912.

The rates of pilotage for the time being in force in this district are, as follows.

	Inward.	Outward.
Canadian vessels of 120 tons and under.....	Free.	Free.
From the pilot boat anchored in the Basin of Minas to Walton and anywhere between Walton and Tenecape, to Cheverie, to Summerville, to Avondale, to Miller's Creek, to Wentworth, to Windsor, to Hantsport, to Avonport, to Horton Landing, to Wolfville, to Port William, to Picket Wharf, to Canning, to anchorage below or above Horton Bluff Light, on vessels under sail, barges in tow or steamers—		
On vessels over 120 tons and under 200 tons.....	\$ 9 60	\$ 6 00
"    200        "    300 .....	13 20	8 40
"    300        "    400 .....	16 80	10 80
"    400        "    500 .....	19 20	12 00
"    500        "    600 .....	21 60	13 20

Over 600 tons, inward, an additional three cents for every ton over 600 tons; outwards, an additional two cents for every ton over 600 tons.

From the pilot boat anchored in Minas Basin to Pereaux, to Kingsport and Mill Creek—

	Inward.	Outward.
On vessels of 120 tons and under.....	Free.	Free.
On vessels under sail, barges in tow or steamers—		
Over 120 tons and under 200 tons.....	\$ 8 00	\$ 5 00
"    200        "    300 .....	11 00	7 00
"    300        "    400 .....	14 00	9 00
"    400        "    500 .....	16 00	10 00
"    500        "    600 .....	18 00	11 00

Over 600 tons, inwards, an additional two cents for every ton above 600 tons; outwards, an additional two cents for every ton above 600 tons.

There are no apprentices in this district.

No white flag ships were licensed during the year.

Navigation opened in April and is still open.

BRENTON BORDEN,

*Secretary.*

Janaury 13, 1914.



REPORT OF PILOTAGE COMMISSIONERS FOR THE DISTRICT OF MIRAMICHI, NORTHUMBERLAND COUNTY, N.B.

PILOTAGE COMMISSIONERS.

Name.	When appointed.
John C. Miller.....	O. C. April 12, 1893.
Wm. B. Snowball.....	" 12, 1893.
Ernest Hutchison .....	" 12, 1893.
Allan Ritchie.....	" 12, 1893.
John P. Burchill.....	O. C. March 7, 1913.
Byron N. Call, secretary.....	O. C. Jan. 13, 1904.

The rates of pilotage for the time being in force in this district, including the amounts and description of all charges upon shipping made in respect of pilotage are as follows:—

When inward bound, \$2.25 per foot, and in addition to the above for all vessels propelled wholly or in part by steam, 2 cents per registered ton.

When outward bound, \$2 per foot, and in addition to the above for all vessels propelled wholly or in part by steam, 2 cents per registered ton.

For the removal and mooring of vessels of over 300 tons, \$4, and where the distance of removal exceeds four miles, 50 per cent additional on the above rate.

Removal within a distance of one mile is not compulsory, but when pilots are requested to perform this service the charge is \$4.

Steam tug boats towing one or more barges with cargo, inward, may depart outward after having paid full pilotage for the tug and barges inward, without paying any outward pilotage, except on the tug.

Compulsory pilotage on all vessels over 119 registered tons.

NAMES OF PILOTS AND EARNINGS.

No.	Name.	When appointed.	Age.	Amount earned.	Amount paid to.
				\$ cts.	\$ cts.
2	Louis Jimmo.....	May 29, 1875.....	59	815 13	645 11
7	Maxime Martin.....	July 10, 1869. ...	68	815 13	675 09
10	Alexander Wilson.....	July 10, 1871.....	67	815 13	675 09
11	Robert J. Walls.....	Jan. 12, 1870.....	62	815 13	709 55
22	William Walls, sr.....	April 20, 1875.....	59	815 13	675 09
27	James Nowlan.....	April 28, 1877.....	62	815 13	675 09
29	George Sutton.....	April 28, 1878.....	62	815 13	645 10
30	James A. Nowlan.....	April 28, 1878.....	58	815 13	645 10
32	Joseph Jimmo.....	April 28, 1879.....	58	815 13	645 10
33	James McCallum.....	April 28, 1880.....	69	815 13	645 10
35	John Martin.....	April 28, 1880.....	54	815 13	645 09
36	Asa Walls.....	June 23, 1880.....	54	815 13	675 08
37	William Walls, jr.....	May 20, 1882. ..	56	815 14	675 09
38	John Nowlan.. ..	June 21, 1872.....	57	815 14	675 09
41	Michael J. Jimmo.....	Nov. 1, 1899.....	46	797 85	770 81
42	George M. Nolan.....	Nov. 2, 1899.....	57	803 85	776 81
44	George Savoy.....	Mar. 10, 1871.....	69	811 85	784 81
				13,825 39	11,638 20

There are no apprentice pilots in this district.  
No white flag ships were licensed during the year.



SESSIONAL PAPER No. 21

STATEMENT OF VESSELS WHICH PAID PILOTAGE FEES FOR THE YEAR.

No.	Nationality.	Tonnage.	Amount paid.
			\$ cts.
45	British steam vessels . . . . .	82,321	6,406 64
18	" sailing vessels.. . . .	6,526	1,040 46
34	Foreign steam vessels . . . . .	63,371	5,035 39
24	" sailing vessels . . . . .	9,120	1,242 90
121		160,338	13,725 39

RECEIPTS AND EXPENDITURES.

RECEIPTS.

EXPENDITURES.

Inward pilotage . . . . .	\$ 6,259 25	Printing pilot forms and bill heads. . . . .	\$ 8 76
Outward " . . . . .	7,136 14	Francis Martin's share in pilot schooners. . . . .	127 58
Removals . . . . .	330 00	Telephone, rental and tolls. . . . .	25 10
Robert J. Walls, payment as pilot master . . . . .	100 00	Rent pilots' office, one year to Apr. 1914. . . . .	24 00
		Miramichi Steam Moving Co., fares . . . . .	11 00
		Sundries, pilots' office. . . . .	6 29
		Horse-hire, pilots to and from vessels. . . . .	2 00
		Repairs to and fitting out Schr. Princess Louise . . . . .	222 73
		Repairs and fitting out Schr. Senator Snowball. . . . .	589 85
		Wages and provisions, Schr. Princess Louise . . . . .	311 54
		Wages and provisions, Schr. Senator Snowball. . . . .	439 43
		Secretary-Treasurer, postage and tolls. . . . .	3 90
		" commission on \$13,825.39 at 3 p.c. . . . .	414 76
		Paid 14 pilots \$9,305.77 and 3 pilots \$2,332.43. . . . .	11,638 20
	\$13,825.39		\$13,825 39

Pilotage Boats.	Statement of cost of Maintenance.	Amount.
		\$ cts.
Princess Louise. . . . .	Wages, provisions, fitting out and repairs. . . . .	534 27
Senator Snowball . . . . .	" " " . . . . .	1,029 28
Mabel. . . . .	Paid by three pilots independent of club. . . . .	
		1,563 55

Navigation opened April 15 and closed December 12, 1913.

BYRON N. CALL,  
*Secretary.*

Dated at NEWCASTLE, N.B., December 16, 1913.



5 GEORGE V., A. 1915

## REPORT OF MONTREAL PILOTAGE.

THE PILOTAGE OFFICE AT MONTREAL, January 12, 1914.

ALEXANDER JOHNSTON, Esq.,

Deputy Minister, Marine and Fisheries Department,  
Ottawa, Ont.

SIR,—I have the honour to report on the working of the Montreal pilotage for the year, 1913.

The offices in Montreal are situated on the waterfront, at No. 209 Commissioners street; Captain James J. Riley is the superintendent, Mr. J. Omer Michaud is the assistant, Mr. F. X. Chadillon is the messenger, and Mr. Chs. Perreault is the night guardian; Mr. C. Lafresnière was guardian on the Sundays that the canal was open.

The offices in Montreal are open during the whole of the year, but the night guardian is only employed and paid for the season of navigation.

The offices in Quebec are on Dalhousie street, opposite the office of the Quebec pilots and the boatman's landing.

Mr. F. J. Boulay had charge of the Quebec office, and was assisted by Mr. Léandre Frenette and Mr. Prudent Beaudet, who acts as night guardian.

The Quebec office is only open during the season of navigation; the night guardian goes off duty and pay at the close of navigation.

At the close of last year, the number of pilots on the active service list was (50) fifty, but this year, Appendix List No. 1 shows (51) fifty-one which is explained as follows:—

“Branch Pilot Barthélémi Arcand (No. 18) was suspended on the 28th May, 1913, the vacancy was filled by Apprentice Pilot J. A. Mayrand being promoted to branch pilot on the 16th September, 1913, so the number of branch pilots remain at (50) fifty.”

Appendix No. 1 shows the names of the branch pilots, their age, place of residence, date of branch, remarks, number of trips to and from Montreal, number of trips to and from intermediate ports, total number of trips, earnings to Montreal, earnings to intermediate ports, total earnings, how employed, whether on special service or on tour-de-role.

The total amount shown as earned by the branch pilots during this year was \$106,955.38, but this amount does not include the money earned by the pilots for moving vessels in the harbour.

The largest amount earned during the season 1913 by any one branch pilot was \$3,079.93, and the smallest was \$997.10, exclusive of money earned by moving vessels in the harbour.

The number of branch pilots assigned to special service was (35) thirty-five. The number of men on tour-de-role was (15) fifteen.

The amount earned by the (35) thirty-five special service men was \$85,368.34, and by the (15) fifteen tour-de-role men \$21,587.04, an average of \$2,439.10 for each special service pilot, and \$1,439.13 for each tour-de-role pilot, exclusive of money earned by moving vessels in the harbour; but including the money earned by the tour-de-role men for movages, their average is \$1,615.47.

No account is taken of the money earned by the special service pilots for movages, but it may be said to be \$100 each.

Appendix No. 2 shows the earnings of the tour-de-rôle pilots for the years 1912 and 1913.

The behaviour of the pilots has been generally good.

Appendix No. 3 shows the names of the selected apprentices, and a summary of the work done by them.



## SESSIONAL PAPER No. 21

Appendix No. 4 shows full list of apprentice pilots, with their ages, place of residence, and date of license, the names with an asterisk before them are those of the four selected apprentices.

The behaviour of these young men has been generally good.

Appendix No. 5 shows the names of the persons who are receiving pensions from the Pilots Superannuation Fund, and the amount received by each, every three months.

The Pilots Superannuation Fund is in the custody and under the control of the Finance Department in Ottawa. This office remits to the Finance Department all moneys received for account of the fund, and receipts for all moneys received from the fund.

Appendix No. 6 shows the number and sort of vessels reported to this office during 1912 and 1913; also gives the tonnage, total number of crews, and the number of inward passengers.

Appendix No. 7 shows the changes that have taken place in the list of pilots from the time that the Department took over the governance of the pilotage up to the present time.

Appendix No. 8 shows the tariff of rates for pilotage in this district, also copy of Order in Council amending the tariff of sea-going vessels from \$2.50 to \$3 per foot, of which a copy is attached to the Appendix No. 8.

The annual general meeting of the Montreal Pilots Association was held at Deschambault, and the following named officers were elected for the year 1914: Wilbrod Gauthier, president; Albéric Angers, vice-president; P. Arthur Arcand, secretary; Albert Gagnon and Frenette J. Delavoie, members of committee.

All respectfully submitted by

Your obedient servant,

J. O. MICHAUD,

*Assistant to Superintendent of Pilots.*



APPENDIX No. 1.

BRANCH PILOTS FOR AND ABOVE THE HARBOUR OF QUEBEC.

STATEMENT showing the number of Branch Pilots for and above the Harbour of Quebec, during the year 1913, their Age, Residence, number of Pilotages, Earnings, and whether employed on Special Service or Tour-de-rôle.

Number.	Name of Pilot.	Age.	Residence.	Date of Branch.	Remarks.	Number of trips to Montreal.		Number of trips to Intermediate Ports.		Total number of Trips.	Earnings to Montreal.	Earnings to Intermediate Ports.		Total Earnings.	Employed on Special Service or Tour-de-Rôle.
						In.	Out.	In.	Out.			\$	cts.		
1	Auger, S. Cleophas....	68	Pointe Levis, P.Q....	Sept. 22, 1874.	.....	13	14	..	..	27	1,849 17	..	..	1,849 17	Donaldson, Thomson, Cairn, Cunard Lines.
2	Labranche, Ferdinand.	67	Portneuf, P.Q. ....	Apr. 8, 1875.	.....	18	17	2	2	39	1,432 68	91	88	1,524 56	Tour-de-Rôle.
3	Bouille, Louis Z . . .	64	Deschambault, P.Q. . .	Jan. 16, 1878.	.....	12	13	..	..	25	1,626 59	..	..	1,626 59	C.P.R. Atlantic SS. Lines.
4	Gauthier, Laurent . . .	63	"	Dec. 10, 1879.	.....	21	17	..	..	38	2,893 46	..	..	2,893 46	Allan Line.
5	Nault, Delavoie.....	60	"	" 10, 1879.	.....	27	26	..	..	52	2,655 99	..	..	2,655 99	Dominion Coal Co.
6	Gauthier, Wilbrod....	61	"	" 10, 1879.	President of committee.	22	16	..	..	38	2,882 75	..	..	2,882 75	Allan Line.
7	Arcand, Norbert. . .	61	Champlain, P.Q. ....	Dec. 10, 1880.	.....	24	23	2	2	51	2,339 29	139	57	2,478 86	Dominion Coal Co.
8	Bouille, Tancrede.....	60	Deschambault, P.Q. . .	" 10, 1880.	.....	13	23	..	..	36	2,710 94	..	..	2,710 94	Allan Line.
9	Raymond, Wilfrid....	59	"	Apr. 20, 1888.	.....	16	16	..	..	32	2,253 16	..	..	2,253 16	Donaldson, Thomson, Cairn, Cunard Lines.
10	Hurteau, Joseph P. . .	53	164 Parc LaFontaine, Montreal.	Mar. 20, 1889.	.....	23	30	3	3	59	2,572 03	183	42	2,755 45	Dominion Coal Co.
11	Perreault, Edouard....	64	Deschambault, P.Q. . .	" 20, 1889.	.....	21	21	..	..	42	2,654 14	..	..	2,654 14	Manchester & Furness Whitey Lines.
12	Dussault, Honore.....	60	Ste. Petronille, P.Q. . .	July 16, 1889.	.....	16	6	1	1	24	950 72	46	38	997 10	Tour-de-Rôle.
13	Briere, Arthur. . . . .	57	Portneuf, P.Q. ....	Apr. 28, 1891.	.....	18	18	..	..	36	2,220 55	..	..	2,220 55	Head, MacLay & McIntyre Lines.
14	Perreault, Alexis.....	51	553 Marie Anne St., Montreal.	" 28, 1891.	.....	13	13	..	..	26	1,918 34	..	..	1,918 34	Canadian Northern SS. Lines.
15	Dufresne, Come. . . .	53	Deschambault, P.Q. . .	June 28, 1891.	.....	22	20	..	..	42	3,079 93	..	..	3,079 93	White Star Dominion, Canada, Austro-Americana & La Compagnie Generale Transatlantique.



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16 Naud, Aubert.....	60	"	July 11, 1893.	.....	16 16	.....	32	2,138 53	.....	2,138 53	53	Allan Line.
17 Dussault, Napoleon...	53	"	Apr. 3, 1894.	.....	16 17	.....	33	2,320 93	.....	2,320 93	93	Donaldson, Thomson, Cairn, Cunard Lines.
18 Arcand, Batthelemi...	53	"	" 3, 1894.	.....	16 1	.....	3	154 25	.....	154 25	25	Tour-de-Role. <i>Suspended May 28, 1913.</i>
19 Bellisle, Prudent	51	692 St. Antoine St., Montreal.	" 3, 1894.	.....	25 25	2	557	9,299 24	243 20	9,299 24	44	Dominion Coal Co.
20 Arcand, Georges.....	49	Deschambault, P.Q....	" 3, 1894.	.....	22 21	.....	43	1,476 27	.....	1,476 27	27	Merchants' Mutual & Anticosti Inland Lines.
21 Toupin, Constant.....	47	Three Rivers, P.Q.	" 3, 1894.	.....	19 11	2	4 36	1,137 55	241 36	1,137 55	91	Tour-de-Role.
22 Perreault, Georges.....	48	1521 Bordeaux St., Montreal.	Sept. 11, 1894.	.....	18 23	.....	41	2,987 76	.....	2,987 76	76	White Star Dominion, Canada, Austro-Americana & La Compagnie Generale Transatlantique.
23 Bouille, Narcisse.....	54	Deschambault, P.Q....	Oct. 9, 1894.	.....	21 21	1	43	2,663 95	35 58	2,663 95	53	Manchester, Furness, Whity Lines.
24 Leveille, Joseph	50	Batiscan, P.Q.	June 18, 1895.	.....	17 16	.....	33	2,218 31	.....	2,218 31	31	Donaldson, Thomson, Cairn, Cunard Lines.
25 Perron, Severre.	56	115 Chr. Colomb Ave., Montreal.	Apr. 14, 1896.	.....	26 28	1	257	2,560 30	84 37	2,560 30	67	Dominion Coal Co.
26 Angers, Alberic.....	39	Ste. Anne de la Parade, Montreal.	Mar. 14, 1898.	Member of committee.	23 18	.....	41	3,044 94	.....	3,044 94	94	White Star Dominion, Canada, Austro-Americana & La Compagnie Generale Transatlantique.
27 Belisle, Arthur	51	Deschambault, P.Q....	Sept. 20, 1898.	.....	16 19	2	239	1,281 05	98 00	1,281 05	05	Tour-de-Role.
28 Hamelin, G. Theodule.	40	Grondines, P.Q.....	" 20, 1898.	.....	28 25	1	155	2,655 41	67 96	2,655 41	37	Dominion Coal Co.
29 Perreault, Anthyme..	45	44 St. Vincent St., Montreal.	May 1, 1900.	.....	6 38	.....	1 45	1,527 03	17 50	1,527 03	53	Tour-de-Role.
30 Raymond, J. N.....	44	Deschambault, P.Q....	Oct. 4, 1900.	.....	19 28	2	251	1,815 55	126 30	1,815 55	85	"
31 Bourassa, Jos. Henri..	36	Bienville, Levis, P.Q..	Apr. 16, 1901.	.....	26 25	.....	152	2,486 80	44 07	2,486 80	87	Dominion Coal Co.
32 Paquin, E. A.....	41	18 Du Pont St., Quebec.	June 13, 1902.	.....	17 12	7	4 40	1,248 80	353 73	1,248 80	53	Nova Scotia Steel and Coal Co., then Tour-de-Role.
33 Labranche, J. Melville.	39	Portneuf, P.Q.....	" 13, 1902.	.....	19 21	.....	40	2,650 51	.....	2,650 51	51	White Star Dominion, Canada, Austro-Americana & La Compagnie Generale Transatlantique.
34 Paquet, Damien	40	Grondines, P.Q.....	Feb. 4, 1903.	.....	20 21	1	244	1,513 39	87 20	1,513 39	59	Tour-de-Role.
35 Gariépy, J. Arthur....	35	Bienville, Levis, P.Q..	Apr. 20, 1903.	.....	25 23	3	556	2,256 61	265 05	2,256 61	66	Dominion Coal Co.
36 Gagnon, Albert.....	39	Three Rivers, P.Q....	Nov. 30, 1903.	.....	16 14	6	339	1,173 61	264 70	1,173 61	31	Tour-de-Role.
37 Frenette, J. Oswald...	38	Portneuf, P.Q.....	Mar. 26, 1906.	.....	23 21	3	350	2,188 58	193 81	2,188 58	39	Dominion Coal Co.
38 Hamelin, Chas. B.....	34	Champlain, P.Q.....	June 8, 1906.	.....	12 16	.....	28	1,750 80	.....	1,750 80	80	Elder Dempster Co. and The New Zealand Shipping Co. Lines.
39 Perron, Tancrede.....	36	38 Orleans St., Maison-neuve, Montreal.	Dec. 1, 1906.	Member of committee.	16 19	.....	35	2,316 88	.....	2,316 88	88	Donaldson, Thomson, Cairn, Cunard Lines.
40 Frenette, J. Delavoie..	36	Portneuf, P.Q.....	Apr. 1, 1907.	.....	20 22	.....	1 43	2,825 17	47 25	2,825 17	42	C.P.R. Atlantic SS. Lines.
41 Hamelin, Fortunat....	35	St. Romuald, or New Liverpool, P.Q.	" 20, 1907.	.....	18 18	.....	36	2,411 78	.....	2,411 78	78	Allan Line.
42 Gauthier, J. Cyriac...	34	2160 St. Denis St., Montreal.	July 3, 1907.	.....	22 21	.....	43	2,872 90	.....	2,872 90	90	C.P.R. Atlantic SS. Lines.



STATEMENT showing the number of Branch Pilots for and above the Harbour of Quebec, during the year 1913, their Age, Residence, number of Pilotages, Earnings, and whether employed on Special Service or Tour-de-rôle—Continued.

Number.	Name of Pilot.	Age.	Residence.	Date of Branch.	Remarks.	Number of trips to Montreal.		Number of trips to Intermediate Ports.		Earnings to Montreal.		Earnings to Intermediate Ports.		Total Earnings.	Employed on Special Service or Tour-de-Rôle.
						In.	Out.	In.	Out.	\$	cts.	\$	cts.		
43	Angers, J. B.	33	Ste. Anne de la Parade, Que.	" 7, 1907.		22	14	2	1	1,375	77	88	38	1,464 15	Tour-de-Rôle.
44	Perreault, David J.	34	22a Boulevard, Three Rivers, Que.	Jan. 15, 1909.		23	13	1	1	1,779	75	80	06	1,858 81	{ Tour-de-Rôle, The from Nov. 1. C.P.R. Atlantic SS. Lines.
45	Lachance, Napoleon.	30	26 Conroy St., Quebec.	June 4, 1909.	Member of committee.	21	12	3	2	1,281	31	158	37	1,439 68	Tour-de-Rôle.
46	Bouille, Henri.	29	Deschambault, P.Q.	" 30, 1909.	Secretary of committee.	20	19	..	1	1,518	45	23	44	1,541 89	"
47	Perron, Theode	32	Sorel, P.Q.	Aug. 1, 1909.		32	30	..	62	2,160	91	..	..	2,160 91	Merchants Mutual & Anticosti Inland Lines.
48	Dussaul, Bona	33	St. Marc des Carrieres, Que.	May 2, 1910.		12	12	..	24	1,424	46	..	..	1,424 46	Manchester & Furness Whity Lines.
49	Arcand, J. Arthur	31	Champlain, P.Q.	Aug. 2, 1910.		27	26	2	4	2,519	40	177	28	2,696 68	Dominion Coal Co.
50	Rivard, F. X.	33	Grondines, P.Q.	Apr. 10, 1911.		20	18	..	3	1,308	44	66	95	1,375 39	Tour-de-Rôle.
51	Mayrand, Joseph A.	31	Lachevrotière Station, Que.	Sept. 16, 1913.		2	9	..	1	317	25	27	19	344 44	"
											103,702 38	3,353 00		106,955 38	

Montreal Pilotage Office,  
MONTREAL, December 31, 1913.

J. O. MICHAUD,  
Assistant Superintendent of Pilots.



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APPENDIX No. 2.—Montreal Pilotage Office.—Earning for each Tour-de-rôle Pilot for the years 1912 and 1913.

Name of Pilot.	Total Earnings in 1912.	Pilotage Earnings in 1913.	Add for Movings in 1913 Approximately.	Total Earnings in 1913.
	\$ cts.	\$ cts.	\$ cts.	\$ cts.
Labranche, Ferdinand .....	923 00	1,524 56	145 00	1,669 56
Dussault, Honoré.....	863 87	997 10	.....	997 10
Arcand, Barthélemi.....	1,019 45	154 25	20 00	174 25
Toupin, Constant.....	935 69	1,378 91	185 00	1,563 91
Bélisle, Arthur.....	943 60	1,379 05	185 00	1,564 05
Perrault, Anthyme.....	1,263 53	1,544 53	540 00	2,084 53
Raymond, J. N.....	1,336 78	1,941 85	380 00	2,321 85
Paquin, E. A.....	.....	1,602 53	95 00	1,697 53
Paquet, Damien.....	1,037 82	1,600 59	115 00	1,715 59
Gagnon, Albert.....	1,224 22	1,438 31	170 00	1,608 31
Angers, J. B.....	1,319 60	1,464 15	140 00	1,604 15
Perrault, David J. ....	.....	1,859 81	75 00	1,934 81
Lachance, Napoléon.....	1,122 48	1,439 68	160 00	1,599 68
Bouillé, Henri.....	.....	1,541 89	170 00	1,711 89
Rivard, F. X.....	931 75	1,375 39	130 00	1,505 39
Mayrand, Joseph A.....	.....	344 44	135 00	479 44
Total.....	12,921 79	21,587 04	2,645 00	24,232 04

J. O. MICHAUD,

Assistant to Superintendent of Pilots.

MONTREAL, December 31, 1913.



5 GEORGE V., A. 1915

APPENDIX No. 3.—Montreal Pilotage Office.—Selected Apprentice Pilots for and above the Harbour of Quebec,—Summary of the work of the Selected Apprentice Pilots for and above the Harbour of Quebec, showing the number of trips made with Branch Pilots on Ocean Steamers during the year, 1913.

No.	Name.	Trips.	
1	Joseph Mayrand.....	41	Branched, <i>pro tem</i> , from Sept. 16, 1913.
2	Jules Briere.....	51	
3	Napoleon deVillers .....	54	
4	Achille Gosselin.....	68	Promoted from September 16, 1913.
5	Armand Marchand.....	44	

J. O. MICHAUD,

*Assistant to Superintendent of Pilots.*

MONTREAL, December 31, 1913.

APPENDIX No. 4.—Montreal Pilotage Office.—List of Apprentice Pilots.—For and above the Harbour of Quebec, with particulars regarding them, Age, Residence, and Date of License.

No.	Name of Apprentice.	Age.	Residence.	Date of License.
1	Mayrand, Joseph A.....	31	Lachevrotière (branched Sept. 16, 1913)	Aug. 16, 1899
*2	Brière, Jules.....	27	Portneuf, Que.....	Dec. 30, 1903
*3	deVillers, Napoléon.....	27	Lotbinière, Que.....	" 30, 1903
*4	Gosselin, Achille.....	28	Deschambault, Que.....	" 30, 1903
*5	Marchand, Armand.....	27	Three-Rivers, Que..	" 30, 1903
6	Paquette, Donat .....	29	Grondines, Que.....	" 30, 1903
7	Lacroix, Edmond.....	28	Contrecoeur, Que.....	" 30, 1903
8	Houde, Thomas.....	27	St. Antoine de Tilly, Que.....	" 30, 1903
9	Marchand, Cyprien...	27	1563 St. André St., Montreal, Que...	" 30, 1903
10	Naud, Emilien.....	27	Deschambault, Que.....	" 30, 1903
11	Perreault, Jos. Origène.....	27	553 Marie Anne St., Montreal, Que...	Nov. 1, 1906
12	Perron, Oscar .....	26	Deschambault, Que .....	May 15, 1907
13	deVillers, Jos. Edmond.....	26	St. Louis de Lotbinière, Que.....	June 15, 1907
14	Beaudry, François ...	23	Ste. Anne de la Pérade, Que .....	May 5, 1908
15	Léveillé, Horace .....	22	Batiscañ, Que.....	" 5, 1908
16	Gauthier, André.....	21	Deschambault, Que.....	Sept. 17, 1908
17	deVillers, Arthur.....	23	St. Louis de Lotbinière, Que.....	May 10, 1909
18	deLachevrotière, C. Auguste .....	23	Lotbinière, P.Q.....	Aug. 31, 1909
19	Hallé, Alphonse .....	20	195 Queen st., Quebec, Que.....	Oct. 14, 1909

\* Those with an asterisk before their names are the selected apprentices.

J. O. MICHAUD,

*Assistant to Superintendent of Pilots.*

MONTREAL, December 31, 1913.



## SESSIONAL PAPER No. 21

## APPENDIX No. 5.—List of Pensioners of the Montreal Decayed Pilots Fund.—Amount payable each Quarter.

No.	Name.	Amount.	Residence.
		\$ cts.	
1	Widow David L. Bouillé.. .. .	29 33	Deschambault, Que.
2	" Alexis Gauthier . . . . .	32 00	"
3	" Octave J. Hamelin . . . . .	37 33	"
4	" Adolphe Lisé. . . . .	37 33	369 St. Catherine St., E., Montreal.
5	" David Mathieu. . . . .	32 00	77 Fabre st., Montreal.
6	" Edouard Naud. . . . .	32 00	189 Joliette st., Hochelaga, Montreal.
7	" Jean Nault. . . . .	32 00	Deschambault, Que.
8	" Elzear Béllisle. . . . .	37 33	178 Selby ave., Westmount, Montreal.
9	" Zéphirin Bouillé. . . . .	37 33	Deschambault, Que.
10	" Cyrille Belisle. . . . .	29 33	40-3rd ave., Viauville, Montreal.
11	" Joseph Pleau. . . . .	37 33	Batiscan, Que.
12	" Nestor Arcand. . . . .	37 33	374-5th ave., Viauville, Montreal.
13	" Alfred Frenette. . . . .	37 33	Portneuf, Que.
14	" C. Lydéric Bouillé. . . . .	32 00	Three-Rivers, Que.
15	" G. Joseph Dussault. . . . .	37 33	Deschambault, Que.
16	" Célestin Brunet . . . . .	37 33	1 Rouville St., Montreal.
17	" L. A. Bouillé. . . . .	37 33	Deschambault, Que.
18	" Joseph Chandonnet.. . . .	37 33	37 Eden St., Levis, Que.
19	" Onésime Naud. . . . .	37 33	Deschambault, Que.
20	Heirs of Josaphat Sauvageau, c/o Gustave Picard, tutor. . . . .	29 33	1594 St. James st., Montreal.
21	Dd. Pilot Jean Arcand. . . . .	75 00	Deschambault, Que.
22	" Philippe Belanger. . . . .	75 00	Lotbinière, Que.
23	" Louis Mayrand . . . . .	75 00	Ste. Anne de la Pèrade, Que.
24	" Augustin Naud. . . . .	75 00	St. Marc des Carrières, Que.
25	" Liboire Perreault . . . . .	75 00	" "
26	" Gédéon Groleau . . . . .	75 00	Grondines, Que.
27	" Alfred St. Amant. . . . .	75 00	Deschambault, Que.
28	" Néré Bellisle. . . . .	75 00	" "
29	" Narcisse Perreault. . . . .	75 00	" "
30	" Ulric Groleau. . . . .	75 00	Grondines, Que
31	" Prudent Beaudet. . . . .	75 00	261 John st., Que.
32	" Georges Dufresne. . . . .	75 00	Deschambault, Que.

J. O. MICHAUD,

*Assistant to Superintendent of Pilots.*

MONTREAL, December 31, 1913.



5 GEORGE V., A. 1915

APPENDIX No. 6.—Montreal Pilotage Office.—Statement showing the number and sort of Vessels reported in this Office, total tonnage, total of crews, and number of Passengers inward for seasons 1912 and 1913.

	1912.	1913.
Sea-going vessels.....	711	775
Lake steamers.....	316	401
Schooners.....	38	47
Barges, tugs, steam yachts, and dredge.....	34	14
	1,099	1,237
Total tonnage of these vessels.....	2,800,070	3,147,974
The number of the masters and crews was.....	70,882	81,773
Number of passengers inward.....	128,727	166,766

There were also 274 lake steamers that came into the still waters of the harbour without reporting at this office, aggregating 296,165 tons, and navigated by 5,203 persons.

J. O. MICHAUD,

*Assistant to Superintendent of Pilots.*

MONTREAL, December 31, 1913.



APPENDIX No. 7.—Montreal Pilotage Office.—At the opening of Navigation 1913, the number of Branch Pilots was (53) fifty-three.

21—21

Pilot Cyrille Belisle.....	Died.....	May 26, 1905
" J. Sifroid Labranche...	Dismissed.....	Oct. 14, 1905
" Gédéon Groleau .....	Pensioned .....	May 1, 1906

These three taken off reduce the number to (50) fifty.

Pilot	Pensioned from	May 1, 1906	Replaced by	Oswald Frenette..	Branched	March 26, 1903
" Alfred St. Amant.....	"	June 1, 1906	"	Chs. B. Hamelin .....	"	June 8, 1906
" Néré Bellisle.....	"	Nov. 27, 1906	"	Tancrède Perron.....	"	Dec. 1, 1906
" Narcisse Perrault .....	"	Jan. 11, 1907	"	J. Delavoie Frenette.....	"	April 1, 1907
" Edouard Pleau.....	Dismissed	Jan. 11, 1907	"	Fortunat Hamelin.....	"	April 20, 1907
" Nestor Arcand.....	Pensioned	May 1, 1907	"	J. Cyriac Gauthier .....	"	July 3, 1907
" C. Lyderic Bouillé. ....	"	May 1, 1908	"	J. B. Angers. ....	"	July 7, 1908
" G. Joseph Dussault.....	"	Nov. 20, 1908	"	David J. Perreault .....	"	Jan. 15, 1909
" Ulric Groleau.....	"	Apr. 24, 1909	"	Napoléon Lachance.....	"	June 4, 1909
" J. B. Nadeau.....	Resignation tendered	Oct. 21, 1908	"	Henri Bouillé . . .	"	June 25, 1909
"	"	accepted May 4, 1909	"			
" Prudent Beaudet....	Pensioned from	Aug. 1, 1909	"	Theode Perron . . .	"	Aug. 1, 1909
" Georges Dufresne .....	"	May 1, 1910	"	Bona Dussault.. .	"	May 2, 1910
" Célestin Brunet.....	"	Aug. 2, 1910	"	J. Arthur Arcand.....	"	Aug. 2, 1910
" Onésime Naud.....	"	Apr. 10, 1911	"	F. X. Rivard.....	"	April 10, 1911
" Barthélemi Arcand....	Suspended	May 28, 1913	"	Joseph A. Mayrand .....	"	Sept. 16, 1913

J. O. MICHAUD,  
Assistant to Superintendent of Pilots.

MONTREAL, December 31, 1913.



5 GEORGE V., A. 1915

APPENDIX No. 8.—Montreal Pilotage Office.—By-law 44 of the By-laws of the Montreal Pilotage District.

By-law 44.—From and after the coming into force of the present by-laws, the following fees shall be payable for pilotage between the Harbours of Montreal and Quebec and between the several places therein mentioned.

PILOTAGE RATES.

From Father Point to Quebec.	Per Foot.	
	Upwards.	Downwards.
	\$ c.	\$ c.
May 1st to November 10th.....	3 87	3 40
November 10th to November 19th.....	4 95	4 46
November 19th to March 1st.....	6 02	5 54
March 1st to May 1st .....	4 41	3 93

Montreal to Quebec.

From the harbour of Quebec to Portneuf and the opposite side of the river St. Lawrence, or below Portneuf and above the harbour of Quebec:

For the pilotage of any vessel in tow, or propelled by steam (except as hereinafter mentioned) for each foot of draught of water—

Upwards .....	\$ 0 50
Downwards .....	0 50

For the pilotage of any sea-going vessel propelled by steam, for each foot of draught of water:

Upwards .....	0 62½
Downwards .....	0 62½

For the pilotage of any vessel under sail, for each foot of draught of water:

Upwards .....	\$ 1 05
Downwards .....	0 70

From the harbour of Quebec to Three Rivers and the opposite side of the river St. Lawrence, or any place above Portneuf and below Three Rivers:

For the pilotage of any vessel in tow or propelled by steam (except as hereinafter mentioned), for each foot of draught of water:

Upwards .....	\$ 1 50
Downwards .....	1 50

For the pilotage of any sea-going vessel propelled by steam, for each foot of draught of water:

Upwards .....	\$ 1 75
Downwards .....	1 75
From Montreal to Three Rivers .....	1 75
From Three Rivers to Quebec .....	1 75



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For the pilotage of any vessel under sail, for each foot of draught of water:

Upwards .....	\$ 2 60
Downwards .....	1 90

J. O. MICHAUD,

*Assistant to Superintendent of Pilots.*

MONTREAL, December 31, 1913.

AT THE GOVERNMENT HOUSE AT OTTAWA,

SATURDAY the 10th day of May, 1913.

PRESENT:—His Excellency the Administrator in Council.

His Excellency the Administrator in Council is pleased to order as follows:

That portion of by-laws No. 45 of the by-laws of the Pilotage District of Montreal as approved by Order in Council of the 29th September, 1911, which reads:

For the pilotage of any sea-going vessel propelled by steam, for each foot of draught of water:

Upwards .....	\$ 2 50
Downwards .....	2 50

is hereby amended to read as follows:

For the pilotage of any inland or coasting vessel propelled by steam, for each foot of draught of water:

Upwards .....	\$ 2 50
Downwards .....	2 50

For the pilotage of any sea-going vessel propelled by steam, for each foot of draught of water:

Upwards .....	\$ 3 00
Downwards .....	3 00

F. K. BENNETTS,

*Asst. Clerk of the Privy Council.*

The Honourable,  
The Minister of Marine and Fisheries.



REPORT OF THE PILOTAGE COMMISSIONERS OF THE PILOTAGE DISTRICT OF NANAIMO, B.C.

PILOTAGE COMMISSIONERS.

Names.	When appointed.
James S. Knairston.. . . . .	O. C. 7 April, 1900.
Henry B. Shaw.....	O. C. 7 April, 1900.
Tully Boyce ... . . . .	O. C. 7 April, 1900.
Ira E. Lowe. .... .	O. C. 21 March, 1912.
Wm. Bennett.....	O. C. 29 May, 1912.
James Crossan, Secretary.	

The rates of pilotage in this district are:

One cent per registered ton, and \$1 per foot draught.

Tow-boats, fishing vessels and small trading vessels are charged at a flat rate of from \$10 to \$20 according to size.

Barges carrying 2,000 tons and over are charged \$20.

“ “ under 2,000 tons and over 1,000 tons \$15.

“ “ under 1,000 tons, are charged \$10.

NAMES OF PILOTS, Etc.

No.	Names.	When appointed.	Ages.	Amount Paid.
1	James Christensen.....	March, 1891.....	72	\$1,942 19
2	James Edward Butler.....	March, 1894 ... .	53	1,942 19
3	Wm. David Owen.....	October, 1898. ...	47	1,942 19
4	Albert Francis Yates .....	September, 1900 ..	61	1,942 19
5	Josiah Grose.....	August, 1903.....	49	1,942 19
6	John Galvin Foote.....	April, 1907. ....	53	1,942 19
7	John Wm. Butler.....	October, 1907. ....	43	1,942 19

There are no apprentice pilots in this district.

No white flag ships licensed during the year.

STATEMENT OF VESSELS WHICH PAID PILOTAGE DURING THE YEAR.

No.	Nationality.	Tonnage.	Amount Paid.
286	British steam vessels.....	263,983	\$10,083 06
137	Foreign steam vessels .....	108,287	4,621 19
.....	Scows and barges.....	43,386	1,667 18
			16,371 43



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RECEIPTS AND EXPENDITURES.

RECEIPTS.		EXPENDITURES.	
British steamers .....	\$10,083 06	Victoria pilot station ex-	
Foreign " .....	4,621 19	penses—	
Scows and barges.....	1,667 18	Boatman's wages.....	450 00
		Boat hire and supplies....	265 15
		Tel. and telephone.....	262 19
		Miscellaneous expenses ..	151 80
		Mileage books.....	100 00
			1,229 14
		Nanaimo pilot expenses—	
		Telegrams and tele-	
		phone.....	68 32
		Buggy and boat hire...	290 25
		Miscellaneous expenses.	83 50
		Commission to collectors	166 45
			608 52
		Pilot Office expenses—	
		Secretary's salary and	
		caretaker.....	480 00
		Office rent .....	264 00
		Telephone, light and	
		fuel.....	67 05
		Miscellaneous postage	
		and stationery.....	126 61
			937 66
		Paid to pilots, etc.....	13,596 11
	16,371 43		\$16,371 43

Name : *Austin Harry*. pilot boat ; wages, \$450.

Navigation is always open.

JAMES CROSSAN,  
*Secretary.*

NANAIMO, B.C., February 2, 1914.

REPORT OF THE PILOTAGE AUTHORITY OF THE PILOTAGE DISTRICT OF NEW WESTMINSTER, B.C.

COMMISSIONERS.

Name.	When Appointed.
J. C. Armstrong.....	February 6, 1904.
James B. Kennedy .....	March 28, 1904.
Joseph Mayers .....	October 18, 1909.

The rates of pilotage dues for the time being in force in this pilotage district are as follows: \$1 per foot draught, and 1 cent per ton on registered tonnage (net).

No apprentice pilots for this district.

No white flag ships licensed during the year.



5 GEORGE V., A. 1915

VESSELS WHICH PAID PILOTAGE DURING YEAR.

Number.	Nationality.	Tonnage.	Amount Paid.
2	British steam vessels . . . . .	6,520	\$ 248 40
1	" sailing vessels . . . . .	2,483	95 66
22	Foreign steam vessels . . . . .	11,627	548 88
3	" sailing vessels . . . . .	2,047	143 28
28		22,677	1,036 22

The only pilot of this authority is paid by the corporation of the city of New Westminster, at the rate of \$150 per month, and all fees collected for pilotage are turned over by the Pilotage Authority to the city, except 10 per cent of same, to defray the expenses of pilot and office.

Navigation is always open.

D. H. MACGORRAN,  
*Secretary.*

NEW WESTMINSTER, B.C., December 31, 1913.

REPORT OF THE PILOTAGE AUTHORITY OF THE PILOTAGE DISTRICT OF PARRSBORO, N.S.  
PILOTAGE COMMISSIONERS.

Name.	When Appointed.
Jaines E. Pettie . . . . .	O.C. January 24, 1881.
Stephen R. DeWolfe . . . . .	do do
Edward Gillespie . . . . .	O.C. February 26, 1889.

The rates for the time being in force in this district are as follows:—

Inward pilotage rates, \$1.25 to \$2.50 per draught foot for sailing vessels, and 50 cents per foot draught additional for steamers.

Outward pilotage rates, \$1.50 to \$2.50 per draught foot for sailing vessels, and 50 cents per foot draught additional for steamers.

Pilotage is non-compulsory.

Name of Pilot.	When Appointed.	Age.	Earnings.
			\$ cts.
Joseph Anderson . . . . .	July 13, 1906 . . . . .	40	393 50

No apprentice pilots in this authority.

No white flag ships licensed during the year.



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VESSELS which paid pilotage fees during the year.

No.	Nationality.	Tonnage.	Amount paid.
			\$ cts.
6	British steam vessels .....	11,442	393 50

*Receipts.**Expenditures.*

	\$	cts.		\$	cts.
Pilotage fees.....	393	50	Paid Pilot Anderson .....	365	97
			" secretary, for salary and contingencies .....	27	53
	383	50		393	50

This pilotage authority does not own any pilot boats.

Shipping started April 14, 1913, and closed December 30, 1913.

E. GILLESPIE,  
Secretary.

PARRSBORO, N.S., December 31, 1913.

## REPORT OF THE PILOTAGE COMMISSIONERS OF THE PILOTAGE DISTRICT OF PICTOU, N.S.

## PILOTAGE COMMISSIONERS.

Name.	When Appointed.
Hector McKenzie.....	O.C. October 19, 1912
G. Adam Carson.....	" " 19, 1912
J. R. Davis.....	" " 19, 1912
William McKenzie.....	" " 19, 1912
G. Adam Pringle.....	" " 19, 1912

The rates of pilots' dues at this port are as follows:—

	Inwards.	Outwards.
Vessels of 80 to 140 tons.....	\$ 6 00	\$ 4 00
" 140 to 200 " .....	10 00	6 00
" 200 to 300 " .....	12 00	8 00
" 300 to 400 " .....	14 00	9 00
" 400 to 500 " .....	15 00	10 00
" 500 to 600 " .....	16 00	11 00
" 600 to 700 " .....	17 00	12 00
" 700 to 800 " .....	18 00	13 00
" 800 to 900 " .....	19 00	14 00
" 900 to 1,000 " .....	20 00	15 00

Vessels of 1,000 tons and upwards, 2½ cents inwards, and 2 cents outwards on net tonnage.

All vessels under 80 tons, \$4 inwards and \$2 outwards.

Docking and moving vessels from anchorage in Harbour, \$5.



5 GEORGE V., A. 1915

NAMES OF PILOTS AND EARNINGS.

No.	Name.	Age.	Amount Paid.
			\$ cts.
2	Angus Smith.....	57	746 92
3	McGregor Fraser.....	46	
4	Wm. Mcphesson.....	39	644 50
			1,391 42

WHITE FLAG SHIP LICENSED DURING THE YEAR.

Name.	Class.	Amount Paid.
		\$ cts.
Caspadeia, J. Hearn, master.....	Br. steamship...	40 00

STATEMENT OF VESSELS WHICH PAID PILOTAGE FEES FOR THE YEAR.

No.	Nationalty.	Tonnage.	Amount Paid.
			\$ cts.
14	British steam vessels.....	21,808	543 42
10	" sailing vessels.....	2,036	54 00
19	Foreign steam vessels.....	30,475	816 21
43			1,413 63

Navigation opened April 2, and closed November 28, 1913.

G. ADAM PRINGLE,  
*Secretary.*

Pictou, N.S., January 20, 1914.

REPORT OF THE PILOTAGE COMMISSIONERS OF THE PILOTAGE DISTRICT OF PORT MEDWAY, N.S.  
PILOTAGE COMMISSIONERS.

Names.	When Appointed.
Edwin Morine.....	O. C. August 8, 1898.
J. F. Wolfe.....	O. C. April 2, 1910.
Chas. Kennedy.....	O. C. March 28, 1912.



SESSIONAL PAPER No. 21

The rates of pilotage for the time being in force in this district are, as follows:—

	Inwards	Outward
Vessels from 120 tons to 300 tons.....	\$ 6 00	\$ 4 00
" " 300 " 400 " .....	7 00	5 00
" " 400 " 600 " .....	9 00	6 00
" over 600 " .....	12 00	8 00

NAMES OF PILOTS AND EARNINGS.

Names.	When Appointed.	Amount earned.
Gilbert Parke.....	February 25, 1907.....	\$20 00
James Parke....	March 9, 1909.....	20 00

There are no apprentices in this district.

Two British steam vessels of 3,802 tons paid pilotage amounting to \$40 during the year.

Navigation is open the whole year round.

PORT MEDWAY, N.S., December 31, 1913.

E. MORINE,  
Secretary.

REPORT OF THE PILOTAGE COMMISSIONERS OF THE DISTRICT OF PRINCE COUNTY, P.E.I.

PILOTAGE COMMISSIONERS.

Names.	When Appointed.
James F. White.....	O. C. September 26, 1905.
John T. Profit.....	O. C. August 25, 1905.

The rates of pilotage for the time being in force in the district are, as follows:—

Vessels of 100 tons and under 250 tons, per foot draught, inwards \$1; outwards, 80c.

Vessels of 250 tons and upwards, per foot draft, inwards \$1.50, outwards \$1.

And on all vessels under 120 tons, accepting the services of a pilot, eight cents per ton inwards and six cents per ton outwards.

NAMES OF PILOTS, ETC.

Names.	When Appointed,	Age.
William Smith.....	May 1, 1913.....	39
Charles Gallant.....	May 28, 1913.....	45

No white flag ships licensed during the year.

No account kept of vessels paying pilotage fees.

Navigation opened April 26, 1913, and closed December 13, 1913.

ALBERTON, P.E.I., January 6, 1914.

JAMES F. WHITE,  
Chairman.



REPORT OF THE PILOTAGE AUTHORITY FOR THE DISTRICT OF PUGWASH, N.S.

Pilotage Commissioners.	When appointed.	Changes.
Elias King.....	O.C. April 29, 1895.....	
Alfred G. King ..	O.C. Sept. 20, 1904.....	
Gordon McDonald.....	O.C. April 24, 1911.....	
Charles Macfarlane.....	O.C. April 22, 1913.....	Replaced William Colbourne.
Peter McLeod.....	O.C. April 22, 1913.....	" E. A. Murray.

The rates of pilotage dues for the time being in force in this district including the amounts and description of all charges upon shipping made in respect of pilotage:—

				Inwards.	Outwards.
Vessels	80 and under	140 tons		\$ 6 00	\$ 5 00
"	140	" 230	"	8 00	7 00
"	230	" 300	"	10 00	9 00
"	300	" 400	"	14 00	12 00
"	400	" 500	"	16 00	14 00
"	500	" 600	"	17 00	15 00
"	600	" 700	"	18 00	16 00
"	700	" 800	"	19 00	17 00
"	800	" 800	"	20 90	18 00
"	900	" 1,000	"	21 00	19 00

Vessels over 1,000 tons shall pay 2½ cents per ton inward; 2 cents outward on additional tonnage.

Vessels under 80 tons accepting pilots shall pay 5 cents per ton inward and 4 cents per ton outward.

Vessels over 1,000 tons register after entering the harbour and being safely moored by a pilot, employing a pilot to be moved again to a loading berth dock or wharf from her first moorings, shall pay to the pilot so employed the sum of \$5.

Vessels under 1,000 tons and over 300 shall pay \$3.

Names of Pilots.	When appointed.	Age.	Earnings.
No. 1 Neil McKevor.....	1890	51	\$219 42
" 2 Clarence Reid.....	1891	60	
" 3 A. E. Seaman.....	1899	35	219 42
" 4 Geo. Tuttle King .....	1903	34	
" 5 Frank Seaman.....	1913	34	219 42
Frank Seamau for piloting schooners.....			10 00
Total earnings.....			\$668 26

There are no apprentice pilots in this district.  
No white flag ships were licensed during the year.



SESSIONAL PAPER No. 21

STATEMENT of vessels which paid pilotage fees for the year.

No.	Nationality.	Tonnage.	Amount paid.
5	British steam vessels .....	5,921	\$266 71
2	German steam vesseis.....	3,552	149 56
1	Norwegian steam vessel. ....	1,785	75 32
1	Swedish steam vessel.....	1,599	71 95
1	Danish steam vessel.....	2,105	94 72
8			\$658 26

<i>Receipts—</i>		<i>Expenditures—</i>	
Pilotage fees for steamers.....	\$658 26	Paid pilots.....	\$668 26
" " schooners.....	10 00		
	\$668 26		\$668 26

Number or Name.	Statement of the Cost of Maintenance.
1 Nimrod.....	Pilots of this port have always maintained cost of boats themselves and paid all expenses of their boats.
2 Venture... ..	
3 Ida.....	
4 Leader.....	
5 Acadia.....	

Navigation opened the average date, April 20, and closed November 25.

ELIAS KING,  
*Secretary.*

Dated at Pugwash, January 1, 1914.

QUEBEC PILOTAGE DISTRICT.

QUEBEC, December 30, 1913.

Captain H. ST. G. LINDSAY,  
General Superintendent of Pilotage,  
Department of Marine and Fisheries,  
Ottawa, Ontario.

SIR,—I respectfully enclose a recapitulation of the pilotage of the branch pilots for and below the harbour of Quebec, done during the season of navigation of the year 1913.

Also a recapitulation of the trips done by the apprentice pilots for and below the harbour of Quebec during the season of navigation of the same year.

Yours truly,

JOS. H. TALBOT,  
*Superintendent of Quebec Pilots.*



5 GEORGE V., A. 1915

## RECAPITULATION of the Pilotages of the branch Pilots for and below the Harbour of Quebec.

No.	Name.	Employment.	In-wards.	Out-wards.	Move-ages.
1	Ray Baquet .....	C. P. R. Lines.....	20	20	2
2	C. A. Raymond .....	Tour de rôle.....	11	10	1
3	Victor Vezina .....	" .....	8	9	1
4	Jos. G. Dupil .....	" .....	11	6	2
5	Pierre Pepin .....	" .....	13	17	0
6	Isiode Noel .....	" .....	11	17	0
7	Alf. Larochelle .....	" .....	12	14	0
8	Theo. Corriveau .....	Dom. Coal Co.....	14	14	0
9	Elz. Godbout .....	" .....	18	17	0
10	Narcisse Lavoie .....	Tour de rôle.....	14	9	2
11	Jos. E. Couillard .....	" .....	10	18	1
12	Louis A Royer .....	" .....	11	12	1
13	Onesime Noel .....	Thomson Line.....	21	21	1
14	Frs. X. Demeule .....	Dominion Line .....	20	25	0
15	Louis H. Lapierre .....	Tour de rôle.....	10	11	2
16	J. E. Lachance .....	Que. S. S. Co. & Tour .....	14	14	0
17	J. T. St. Laurent .....	White Star Dominion .....	25	19	0
18	J. Victor Gourdeau .....	Tour de rôle.....	12	15	3
19	Ls. T. Delisle .....	" .....	8	7	1
20	J. B. Couillard .....	Dom. Coal Co.....	13	13	0
21	Adj. Baillargeon .....	White Star Dom .....	23	23	1
22	Sam. Rioux .....	Suspended for three years.			
23	Chas. O. Clavet .....	Dom. Coal Co.....	15	15	0
24	Paul Lachance .....	Tour de rôle.....	10	11	2
25	A. Jouvin .....	" .....	12	11	0
26	Paul Lachance .....	Allan Line.....	25	21	0
27	Jos. Pouliot .....	Tour de rôle.....	12	10	0
28	Adj. Lachance .....	C. P. R. Lines.....	9	10	0
29	Frs. Gaudreau .....	" .....	21	21	1
30	Arthur Kœnig .....	Tour de rôle.....	11	11	1
31	Eugene Anctil .....	" .....	12	11	0
32	David Dumas .....	" .....	10	12	1
33	Joseph Lachance .....	" .....	10	11	0
34	Alf. Pouliot .....	" .....	12	16	0
35	Elz. Normand .....	" .....	12	7	0
36	J. B. Bernier .....	Cunard Donaldson .....	20	22	0
37	Joseph Paquet .....	Tour de rôle.....	13	11	1
38	J. A. Lachance .....	" .....	10	13	0
39	Arth. Baillargeon .....	Dom. Coal Co.....	21	21	0
40	Joseph Vezina .....	Allan Lines .....	20	20	5
41	Herm. Guenard .....	Tour de rôle.....	13	11	0
42	John A. Irvine .....	Capt. Red Island Lightship.			
43	Fred. Bouffard .....	Tour de rôle.....	11	11	0
44	Jules Asselin .....	Allan Lines .....	20	24	0
45	Lucien Lachance .....	Tour de rôle.....	10	13	0
46	Camille Bernier .....	White Star Dominion .....	26	27	1
47	Moise Blouin .....	Tour de rôle .....	10	13	1
48	Alf. Gaudreau .....	" .....	11	11	0
49	Alf. Raymond .....	Head Lines .....	13	27	0
50	Phileas Lachance .....	Dom. Coal Co.....	18	17	0
51	Moise A. Lachance .....	Tour de rôle.....	12	10	0
52	Louis F. Thivierge .....	Dom. Coal Co.....	14	14	0
53	Alp. Paquet .....	Tour de rôle.....	9	12	0
54	Adelard Bernier .....	C. P. R. Atlantic Lines.....	25	22	1
55	J. B. Pouliot .....	Capt. Tender "Lady Evelyn" .....			
56	Leonidas Lachance .....	Tour de rôle.....	11	11	0
57	Eudore Langlois .....	" .....	12	9	0
58	Joseph Delisle .....	" .....	13	12	2
59	Jules Lachance .....	Cunard Donaldson .....	22	20	2
60	Auguste Santerre .....	Allan Line.....	21	24	2
61	Arthur Larochelle .....	Dom. Coal Co .....	20	20	0
62	Raoul Lachance .....	Elder Dempster .....	15	14	1
63	William Langlois .....	Royal Line.....	13	14	1
64	Ernest Bernier .....	Dom. Coal Co .....	20	20	0
65	Arthur Baquet .....	Elder Dempster .....	13	20	0
66	Jules Lamarre .....	Dom. Coal Co .....	17	16	0
67	George Larochelle .....	Manchester Dom. Line.....	25	23	4
68	Adelard Delisle .....	" .....	22	23	2
69	Alex. Larochelle .....	Thomson Line.....	24	19	2
70	Arthur Paquet .....	Tour de rôle.....	12	10	0



## SESSIONAL PAPER No. 21

The following remarks are to be attached to the Recapitulation of Pilotages done by the branch pilots for and below the harbour of Quebec.

1	Ray. Baquet.....	Remitted his Branch to December 4th, 1913, and his resignation was accepted by the Department on December 12th, 1913.
2	C. A. Raymond.....	Reported sick from November 18th, 1913.
3	Victor Vezina.....	Having reached the age limit, was pensioned.
4	Jos. G. Dupil.....	Line Pilot until June, then Tour de role Pilot. Reported sick Oct. 7th, asked to be pensioned, and resignation accepted, October, 1913.
19	Louis Treffe Delisle..	Suspended on October 1st, 1913, until end of navigation season, <i>re</i> stranding S.S. "Whakatane".
22	Sam. Rioux.....	Suspended for three years from December, 1912, <i>re</i> stranding of S.S. "Royal George".
23	Chas. O. Clavet.....	Was on board S.S. "Bridgeport" which has not been heard of since leaving Sydney, N.S., on November 1st, 1913.
28	Adjutor Lachance. ....	Suspended August 14th, 1913, for balance of season, <i>re</i> stranding of S.S. "Lake Manitoba". Re-instated October 17th, 1913.
35	Elzear Normand.....	Reported sick November 18th, 1913.

## RECAPITULATION of work done by apprentices for and below the harbour of Quebec, 1913.

No.	Name.	Inwards.	Outwards.	Total.
1	Gabriel Lachance.....	26	25	51
2	Ernest Pouliot.....	23	23	46
3	Bastine Anetil.....	15	15	30
4	J. Adelard Bernier.....	16	16	32
5	Felix Lavoie.....	15	14	29
6	Chas. H. Koenig.....	12	8	20
7	Louis Gonz. Lavoie.....	17	16	33
8	Albert Lachance.....	18	17	35
9	Cyrille Pouliot.....	38	20	58
10	Paul E. Lachance.....	16	15	31
11	Herm Bouffard.....	14	13	27
12	F. J. G. Gaudreau.....	13	12	25
13	Herm Lachance.....	15	16	31
14	Camille Couillard.....	14	15	29
15	Lactance Lachance.....	16	13	29
16	J. W. Pouliot.....	16	14	30
17	L. P. Langlois.....	15	15	30
18	Rodrigue Lachance.....	15	14	29
19	Edmond Baquet.....	16	15	31
20	Leo. Labrecque.....	15	16	31
21	Eudore Langlois.....	18	18	36
22	Romeo Gaudreau.....	15	15	30



5 GEORGE V., A. 1915

REPORT of the Corporation of Pilots for and below the Harbour of Quebec, for the year ending December 31, 1913.

QUEBEC, December 31, 1913.

A. JOHNSTON, Esq.,  
Deputy Minister of Marine and Fisheries,  
Ottawa.

SIR,—I have the honour to transmit to you a detailed statement, in duplicate, of the money received and paid from the pension fund of the Decayed Pilots of Quebec for the year just past, also a detailed statement, in duplicate, of the money received and paid by the Corporation of Pilots, all audited and certified.

The amount received by the Corporation of Pilots for pilotage was.. . . . .	\$152,612 84
Less general expenses, comprising 7 per cent to Pension Fund, remittance on loan to Decayed Pilots' Fund, and pensions to pilots, etc... . . . .	26,762 84
Leaving a net balance of.. . . . .	\$125,850 00
This gave a dividend to each pilot of \$1,900.	
977 British vessels paid .. . . . .	\$146,138 34
40 foreign vessels paid.. . . . .	6,474 50
1017 . . . . . Total.. . . . .	\$152,612 84

I have the honour to be, sir,

Your obedient servant,

PH. LAMONTAGNE,  
*Secretary-Treasurer.*

REPORT of the Corporation of Pilots for and below the Harbour of Quebec, for the year ending December 31, 1913.

RECEIPTS.		EXPENDITURES.	
Balance, 1913 .....	\$ 1,904 65	Interest paid on loan.....	\$ 100 00
Reserve Fund.....	1,000 00	Amount paid on principal.....	2,000 00
Customs of Montreal.....	7,048 23	Rent.....	2,503 77
" Three Rivers.....	251 18	Taxes, city.....	184 00
" Chicoutimi. ....	4,623 85	General expenses . . . . .	1,752 48
" Sorel.....	170 72	Expenses of pilots ... . . . .	520 75
" Rimouski. ....	243 35	Indemnity to Directors.....	583 33
" Riviere du Loup.....	36 12	Legal Advisers.....	893 10
" Escoumains.....	44 28	Insurance.....	36 60
Interest, La Banque Nationale.....	143 31	Pilotage paid twice and remitted.....	953 76
Fines.....	50 00	Pilots pensioned ... . . . .	4,000 00
Lost time....	1,380 39	Salary of employees.....	1,750 00
Board, Father Point.....	2,111 25	" caretaker.....	500 00
Rent .....	1,568 00	" Treffe Simard ... . . . .	387 50
Pilotage collected at Quebec.....	140,195 11	Board Father Point.....	2,296 27
		Decayed Pilots Fund.....	10,682 93
		Dividends.....	125,850 00
		Balance .. . . . .	5,775 95
	\$ 160,770 44		\$ 160,770 44



## SESSIONAL PAPER No. 21

STATEMENT of moneys received and expended by the Corporation of Pilots for the  
Decayed Pilot Fund of Quebec during the year.

RECEIPTS.		EXPENDITURES.	
Balance from 1912.....	\$51,159 21	By pensions .....	\$13,934 44
Contribution of Pilots.....	10,682 93	Assistance.....	83 30
Interest on investments .....	3,710 75	Salaries.....	550 00
Interest from Savings Bank.....	1,245 58	Deposits in Savings Bank .....	8,230 73
Remitted by Corporation of Pilots .....	2,000 00	Debentures Corporation of Village of Plessisville .....	36,000 00
		Mgr. J. N. Begin, Arch. of Quebec..	10,000 00
	<hr/> 68,798 47		<hr/> \$68,798 47

## PENSIONERS AT EXPENSE OF FUND.

		Per annum.	
20 pilots at ... ..	\$ 300 00		\$ 5,501 34
1 pilot at.....	270 00		270 00
10 pilots at.....	216 00		1,811 70
24 widows at.....	116 00		2,735 70
11 widows at.....	112 00		1,206 70
5 widows at.....	110 00		550 00
6 widows at.....	106 00		636 00
4 widows at.....	100 00		375 00
4 widows at.....	96 00		384 00
1 widow at.....	76 00		76 00
1 widow at.....	70 00		70 00
1 widow at.....	68 00		68 00
1 widow at.....	64 00		64 00
10 children at .....	30 00		286 00
99 Pensioners			<hr/> 13,934 44

## STATEMENT OF INVESTMENT EXPENDITURES.

RECEIPTS.		EXPENDITURES.	
Balance from 1912.....	\$51,159 21	By Pensions, 1913	
Debentures of City of Quebec, Class "B"		Assistance .....	\$ 83 30
\$9,000 at 7 p.c.....	630 00	Quarter to 31st January, 1913.....	3,460 25
Corporation of Pilots, 1 year interest on		" 30th April, 1913.....	3,414 15
\$2,000 at 5 p.c.....	100 00	" 31st July, 1913.....	3,530 00
Corporation of Pilots, remittance on loan	2,000 00	" 31st October, 1913.....	3,530 04
Corporation of St. Valier, 1 year interest		Debentures Corporation of Village of	
on \$5,000 at 4 p.c.....	200 00	Plessisville at 5 p.c .....	36,000 00
Corporation of St. Romuald, 1 year		Mgr. L. N. Begin, Arch. de Quebec,	
interest at 4 p.c. on \$14,000 .....	560 00	at 5 p.c.....	10,000 00
Syndicate of St. Prime, 18 months in-		Salary of Sec.-Treas and Assistant...	550 00
terest on \$18,500 at 4½ p.c.....	1,248 75	Deposits in Savings Bank.....	8,230 73
Syndicate Chemins à Barrières \$1,200 at			
6 p.c .....	72 00		
Interest, Banque Nationale, Quebec....	1,245 58		
Contributions of Pilots .....	10,682 93		
Debentures Corporation of Village of			
Plessisville, 6 mos. interest \$36,000 at			
5 p.c.....	900 00		
	<hr/> \$ 68,798 47		<hr/> \$ 68,798 47

## STATEMENT OF FUNDS.

Money loaned.. ..	\$93,700 00
Money in Savings Bank.. ..	8,230 73
	<hr/> \$101,930 73
Arrears.. ..	53 00
	<hr/> \$101,877 73

PH. LAMONTAGUE,

*Secretary-Treasurer.*

QUEBEC, December 31, 1913.



5 GEORGE V., A. 1915

TABLE 1.—Rates of Pilotage for and below the Harbour of Quebec for each foot of draught water.

PILOTAGE RATES.

From	To	From May 1 to Nov. 10.	From Nov. 10 to Nov. 19.	From Nov. 19 to Mar. 1.	From Mar. 1 to May 1.
Father Point or any place below the anchorage of Brandy Pots, off Hare island.....	Anchorage or mooring ground in the basin or harbour of Quebec.	\$3 87	\$4 95	\$6 02	\$4 41
The Anchorage ground at the Brandy Pots off Hare island or any place above the said anchorage ground and below St. Roch's Point...	" ..	$\frac{2}{3}$ of this sum.	$\frac{2}{3}$ of this sum.	$\frac{2}{3}$ of this sum.	$\frac{2}{3}$ of this sum.
St. Roch's Point or any place above this point and below the Pointe-aux-Pins or Crane island or any place below St. Patrick's Hole..	" ..	$\frac{1}{3}$ of this sum.	$\frac{1}{3}$ of this sum.	$\frac{1}{3}$ of this sum.	$\frac{1}{3}$ of this sum.
The anchorage or mooring ground in the Basin or harbour of Quebec.....	Father Point or the place where the pilot shall be discharged in the river below Quebec.....	\$3 40	\$4 46	\$5 54	\$3 93

From	To	—
Any wharf in the harbour of Quebec between Pointe-à-Carcy below, and the West End of the Allan's wharf above, both inclusive .....	Any other wharf within said limits...	\$2 50
Any place in the harbour of Quebec, not being a wharf within the above mentioned limits.....	Any other place in the said harbour not being a wharf within the said limits.	5 00

REPORT OF FATHER POINT PILOT TENDER C.G.S. *Eureka*, FOR 1913.

QUEBEC, January 5, 1914.

Mr. A. JOHNSTON,  
Deputy Minister of Marine and Fisheries,  
Ottawa, Ont.

SIR,—I have the honour to inclose herewith my reports for the year 1913, as to my service as master of pilot and mail tender at Father Point.  
I pointed out last year, many improvements to be made on this ship, as the boat was to be changed from that service; but last spring it left for the same service without any changes and in the same old condition.



## SESSIONAL PAPER No. 21

Inclosed you will find my report and general description of accommodation needed for this pilot and mail service at Father point, on the *Eureka*; also repairs which would be needed, as you will see in my two reports, even if the *Eureka* is changed from her present service at Father point.

Yours truly,

CAPT. J. B. BELANGER,

*Master, C.G.S. Eureka.*

Captain Belanger furnished a general description of the *Eureka* in which he expresses his opinion about the suitability of the vessel for the pilot service at Father point.

The report is given in detail respecting the requirements of the vessel to make her, in his opinion more suitable for the service.

He recommends that some changes be made in order to make the vessel more comfortable in heavy weather.

Some of these recommendations include giving more shelter on the bridge, and mention some instances as heavy gales when the improvement is necessary.

He refers to the power of the vessel which is not up to the strength that would make her work more freely in heavy weather.

Captain Belanger refers to repairs that he considers will be necessary even if the vessel were put into some other service.

The details he refers to include repairing cross bunker and overhauling a water tank and painting the inside and outside of the houses on deck.

The water tank in the captain's room needs repairs.

A new propeller blade is also required, a new cook stove and some changes in the steering gear.



REPORT OF CAPT. J. B. BELANGER, MASTER C.G.S. "EUREKA."

QUEBEC, January 5, 1914.

NUMBER of vessels boarded during the season of 1913.

	Steamers inward.	Boarded outward.	Total.	Miles.
April .....	18	4	22	239
May.....	103	78	181	736
June.....	131	109	240	803
July.....	111	111	222	914
August.....	120	112	232	817
September .....	99	97	196	715
October.....	97	95	192	706
November .....	70	70	145	989
December.....	2	3	5	244
Total. . . . .	751	679	1,435	6,163

YACHTS and Sailing Vessels.

Yachts....	20	18	38
Barques .....	6	6	12
Total .....	26	24	50

	Boarded.	Passing off.
Steamers .....	1,435	685
Yachts.....	38	
Barques .....	12	
Total .....	1,485	685

	Inward.	Outward.	Total.
Yachts.....	20	18	38
Barques.....	6	6	12
Total.....	26	24	50

Amount of coal used on C.G.S. "Eureka."

<i>During summer of 1913.—</i>	Tons.
Took at Quebec .....	60
Took at Father Point .....	426
Took at Rimouski wharf .....	154
Total .....	640
Coal on board .....	20
Coal on Father Point Wharf .....	50
Coal in Rimouski's shed on wharf .....	15
Total remaining .....	85

(Extract from engineer's log.)

CAPTAIN J. B. BELANGER,  
C.G.S.. "Eureka."



## SESSIONAL PAPER No. 21

## REPORT OF THE PILOTAGE COMMISSIONERS OF THE PILOTAGE DISTRICT OF RESTIGOUCHE, N.B.

## PILOTAGE COMMISSIONERS.

Names.	When Appointed.
W. F. Napier.....	O. C. 6 December, 1905.
A. H. Hilyard.....	O. C. 5 May, 1903.
David Champoux.....	O. C. 8 February, 1907.
James E. Steward.....	O. C. 2 March, 1912.
John T. Mowat.....	O. C. 9 February, 1912.

The rates of pilotage in force in this district are as follows:—

The rates on pilotage including the properly securing and mooring all ships or vessels, pilotage for the several ports within the pilotage district of Restigouche shall be as follows:—

For every foot of water any ship or vessel shall draw at the time inward or outward bound in the port of Dalhousie, Benjamin, Beaver point, Nash creek, Jacquet river, or any loading station east of Dalhousie on the bay of Chaleur, \$1.50; Port of Campbelltown, \$2; Oak Bay or any loading station east of same, west of Dalhousie, \$2, when ships proceed direct from sea.

Ships bound for Dalhousie, Benjamin, Beaver point, Nash creek, Jacquet river, or any loading station east of Dalhousie, calling at any of the said harbours for orders, or to discharge ballast, cargo, or otherwise on ship's account, \$1.50; and thence to the said port or loading station on the bay of Chaleur, 75 cents per foot draught of such ships at the time.

Ships bound for Campbellton, Oak Bay or any loading station east of Oak Bay and west of Dalhousie waiting at Dalhousie or any of the outer bay ports to discharge ballast cargo or otherwise on ship's account, \$1.50, and thence to the said port of Campbellton, 75 cents; Oak Bay or any loading station east of Oak Bay, and west of Dalhousie, 75 cents per foot draught of such ship at the time and vice versa.

For removal of any ship, including the properly securing and mooring such ship, the following rates, viz.: The sum of one dollar and fifty cents for ships not exceeding one hundred and twenty tons; the sum of two dollars for ships over one hundred and twenty tons and not exceeding three hundred tons; the sum of four dollars for ships over three hundred tons and not exceeding six hundred tons; and the sum of five dollars for all ships over six hundred tons; and when the distance of removal extends four miles, fifty per cent additional to above rates. In addition to above rates all vessels propelled wholly or in part by steam shall pay one cent inwards and one cent outwards per net registered tonnage.

## NAMES of Pilots and Earnings.

Names.	Age.	Earnings.
Robert McNeil (retired).		\$ cts.
Joseph Elsliger.....	57	1,275 60
Edward Elsliger.....	48	1,275 60
Wm. Donohue.....	46	1,275 60
Neils Neilson.....	39	1,275 60
Dan. McNeil .....	36	1,275 60
		6,378 00



5 GEORGE V., A. 1915

STATEMENT of Vessels which paid Pilotage Fees for the year.

No.	Nationality	Tonnage.	Amount Paid.
			\$ cts.
27	Foreign steam vessels.....	46,070	2,395 40
12	British sailing vessels.....	3,421	408 00
35	British steam vessels.....	47,049	2,772 46
40	Foreign sailing vessels.....	38,231	1,364 23
114		134,771	6,940 09

Receipts.	\$ cts.	Expenditures.	\$ cts.
Pilotage as per other side.....	6,940 09	Retained for expenses commission, including Secretary's salary.....	208 18
		Expenses of boats and upkeep.....	353 91
		Divided amongst five pilots.....	6,378 00
	6,940 09		6,940 09

Navigation opened May 1, and closed November 26, 1913.

W. F. NAPIER,  
For Secretary.

RESTIGOUCHE RIVER, N.B., December 31, 1913.

REPORT OF THE PILOTAGE COMMISSIONERS OF THE PILOTAGE DISTRICT OF RICHIBUCTO, N.B.  
PILOTAGE COMMISSIONERS.

Names.	When appointed.
Wm. J. Brait.....	O. C. May 8, 1888.
Richard R. O'Leary.....	" June 21, 1909.
Frank Curran.....	" " 21, 1909.
W. E. Forbes.....	" " 21, 1909.
Fred. Ferguson.....	" " 21, 1909.

The rates of pilotage for the time being in force in this district, are as follows:  
\$1.50 per foot inward; \$1.50 per foot outward.

NAMES OF PILOTS.

Names.	Age.	Earnings.
George Long.....	70	\$ 250 00
James Long.....	72	
William Long.....	65	100 00
John Curwin.....	65	
		\$ 350 00



SESSIONAL PAPER No. 21

VESSEL WHICH PAID PILOTAGE DURING THE YEAR.

1 British steam vessel of 1,987 tons.  
4 Foreign steam vessels of 1,420 tons.  
*Receipts.*—4 Pilots' Licenses, \$4; earnings, \$350; total, \$354.  
*Expenditures.*—License forms, 25 cents; Pilots' fees, \$350; total, \$50.25.  
Navigation opened April 15, and closed November 30, 1913.

FRED. FERGUSON,  
*Secretary.*

RICHBUCTO, N.B., January 15, 1914.

REPORT OF THE PILOTAGE COMMISSIONERS OF THE PILOTAGE DISTRICT OF SHEPODY BASIN, N.B.

PILOTAGE COMMISSIONERS.

Names.	When appointed.
Watson H. Steeves.....	O. C. October 10, 1912.
B. T. Carter.....	" " 10, 1912.
Isaac C. Prescott.....	" " 10, 1912.
Robt. C. Bacon.....	" June 24, 1911.
Geo. R. Paysant.....	" " 24, 1911.

The rates of pilotage for the time being in force in this district are, as follows:—  
2 cents per registered ton inwards.  
1 cent per registered ton outwards.

PILOTS.

Names.	When appointed.	Age.	Amount earned.
Herbert A. Peck.....	April 30, 1912....	37	\$ 539 78
Josiah Christopher..	" 30, 1912 ...	40	585 35
John E. Bishop.....	" 30, 1912....	60	141 65
Charles Bishop.....	" 30, 1912....	58	136 00.
			\$ 1,402 78

STATEMENT of Vessels which paid Pilotage during year.

No.	Nationality.	Tonnage.	Amount Paid.
7	British sailing vessels.....	6,834	\$ 251 60
45	Foreign steam vessels.....	31,849	1,015 16
9	Foreign sailing vessels.....	4,078	136 02

There are 4 pilot boats, the cost of maintenance of which was \$30.  
Navigation opened April 1, 1913, and closed January 1, 1914.

B. T. CARTER,  
*Secretary.*

HOPEWELL CAPE, N.B., February 3, 1914.



REPORT OF THE PILOTAGE COMMISSIONERS OF THE PILOTAGE DISTRICT OF SHEDIAC, N.B.

PILOTAGE COMMISSIONERS.

Names.	When Appointed.
Michael Connors.....	O. C. Jan. 12, 1906
J. Charles Roberts.....	O. C. Jan. 12, 1906
George McDevitt .....	O. C. Jan. 12, 1906
D. J. Doiron.....	O. C. Jan. 12, 1906
E. R. McDonald.....	O. C. Jan. 12, 1906

The rates of pilotage in force in this district are as follows:—

Inwards, \$1.50 per foot draught.

Outwards, \$1.50 per foot draught.

For removal of any ship or vessel, and seeing such ship or vessel properly secured or moored, the sum of \$4; hauling a vessel into the wharf or dock from the stream not to be considered a removal.

All ships propelled by steam or driven by power other than sails shall pay 4 cents per ton on the registered ton in addition to above charges.

NAMES OF PILOTS AND AGES.

- Aliff Hendricksen, 52.
- Paul P. LeBlanc, 69.
- Thomas McGrath, 67.

STATEMENT of Vessels which paid pilotage fees for the year.

No.	Nationality.	Tonnage.	Amount Paid.
1	British steam vessel.....	1,786	\$ 113 36
3	Foreign steam vessels.....	2,545	217 34
2	Foreign sailing vessels.....	462	57 75
			\$ 388 45

Receipts.

Expenditures.

Pilotage dues.....	\$ 388 45	Paid pilots.....	\$ 350 69
		Commission on dues.....	7 76
	\$ 388 45		\$ 388 45

Navigation opened April 8, and closed December 27, 1913.

E. R. McDONALD,

Secretary.

SHEDIAC, N.B., March 13, 1914.



SESSIONAL PAPER No. 21

REPORT OF THE PILOTAGE COMMISSIONERS FOR THE DISTRICT OF ST. ANNS, VICTORIA COUNTY,  
N.S.

PILOTAGE COMMISSIONERS.

Name.	When Appointed.
Angus J. McRitchie.....	O.C. April 23, 1904.
Murdoch Smith .....	" " 23, 1904.
Donald McAulay.....	" " 23, 1904.

The rates of pilotage dues for the time being in force in this district, including the amounts and description of all charges upon shipping made in the respect of pilotage are:—

Vessels of 120 to 200 tons .....	\$ 7 00	Vessels of 500 to 600 tons .....	\$16 00
" 200 to 250 " .....	8 00	" 600 to 700 " .....	17 00
" 250 to 300 " .....	9 00	" 700 to 800 " .....	18 00
" 300 to 350 " .....	12 00	" 800 to 900 " .....	19 00
" 350 to 400 " .....	13 00	" 900 to 1,000 " .....	20 00
" 400 to 450 " .....	14 00	" 1,000 to 1,500 " .....	21 00
" 450 to 500 " .....	15 00	" 1,500 to 2,000 " .....	24 00

NAMES OF PILOTS AND EARNINGS.

No.	Name.	When Appointed.	Age.	Amount Received.
				\$ cts.
1	Joseph Fader .....	May 1, 1904. ....	60	196 50
2	Angus B. Morrison .....	" 1, 1904. ....	38	196 50
3	Murdoch Carmichael .....	" 1, 1913. ....	40	196 50
4	Dan Buchanan .....	" 1, 1904. ....	40	196 50
				\$ 786 00

There are no apprentices in this district.

No white flag ships were licensed during the year.

Eighteen foreign steam vessels, tonnage 22,621, paid pilotage amounting to \$786 during the year.

The amount of \$786 received was paid to pilots without any deduction.

Navigation opened April 25, and is about closed at this date, January 2, 1914.

DONALD MCAULAY,

Secretary.

ENGLISHTOWN, January 2, 1914.



REPORT OF THE PILOTAGE COMMISSIONERS OF THE PILOTAGE DISTRICT OF ST. JOHN, N.B.

COMMISSIONERS.

Name.	When Appointed.	Changes.
James Knox .....	Appointed by City Council, Jan. 31, 1894....	Replaces Edward Lantlum.
Henry Finnegan.....	" " 1913.....	
J. Willard Smith.....	" Board of Trade, Sept. 19, 1894.	
Harold C. Schofield.....	" " Oct. 13, 1911..	
John C. Chesley. . . . .	O. C. Oct. 31, 1912.....	
James E. Cowan.....	" " 31, 1912.....	
James Lewis.....	" " 31, 1912.....	

The rates of pilotage for the time being in force in this District, are as follows:—

RATES.

On all steamships not otherwise exempt.

Inward—

1st District .....	\$2 00 per foot draught of water.
2nd " .....	2 50 " "
3rd " .....	3 00 " "

Outward—

To Partridge island.....	\$1 75 per foot.
Down the bay of Fundy (not compulsory).....	2 75 "

SAILING SHIPS.

Inward—

1st District.....	\$1 50 per foot draught of water.
2nd " .....	1 75 " "
3rd " .....	2 25 " "

Outward—

To Partridge island.....	\$1 25 per foot.
Down the bay of Fundy (not compulsory).....	2 00 "

Transporting—

200 tons and under.....	\$ 2 00	From 2,000 and up to 2,500.....	\$13 00
From 200 tons and up to 300.....	3 50	2,500 " 3,000.....	15 00
300 " 400.....	4 00	3,000 " 3,500.....	17 00
400 " 500.....	5 00	3,500 " 4,000.....	19 00
500 " 1,000.....	7 00	4,000 " 4,500.....	21 00
1,000 " 1,500.....	9 00	4,500 " 5,000.....	23 00
1,500 " 2,000 .....	11 00	5,000 tons and over .....	25 00



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NAMES OF PILOTS AND EARNINGS.

Names.	When appointed.	Age.	Earnings.
James Bennett.....	1882	56	\$ 2,104 75
Alfred Cline.....	1878	56	736 80
Richard B. Cline.....	1898	42	1,033 20
James Doyle.....	1874	76	1,410 92
Joseph Doherty.....	1874	67	2,212 20
Robert Doherty.....	1908	28	3,317 70
James H. Miller.....	1899	33	1,722 20
William Murray.....	1899	39	2,354 00
Fenwick M. McKelvie.....	1908	27	2,965 60
William Quinn.....	1874	66	2,271 05
Bartholomew Rogers.....	1881	56	2,431 98
James Spears.....	1874	68	664 58
William J. Spears.....	1908	27	1,607 80
Thomas J. Stone.....	1874	60	2,084 61
Richard Scott.....	1874	62	.....
William Scott.....	1878	57	1,680 10
John S. Thomas.....	1875	65	2,270 25
Thomas Traynor.....	1874	60	1,726 61
			32,594 05

NAMES OF APPRENTICE PILOTS, AGES, ETC.

Name.	When appointed.	Age.
John F. Abbott.....	June 1, 1910	17
Wm. P. Traynor.....	"	18
William Scott.....	"	18

These apprentices are paid monthly by the boat to which they are attached.  
No white flag ships licensed.

STATEMENT OF VESSELS WHICH PAID PILOTAGE FEES FOR YEAR.

No.	Nationality.	Tonnage.	Amt. Paid
243	British steam vessels.....	815,760	\$ 27,720 98
68	British sai ing vessels.....	20,071	2,152 64
35	Foreign steam vessels....	19,314	1,830 16
160	Foreign sailing vessels.....	61,050	4,608 65
506			\$ 36,312 43

STATEMENT OF PENSION FUND.

At credit of Pilot Fund December 31, 1913....	\$ 14,823 00
By interest on Bank deposits.....	371 72
Five per cent from net pilotage.....	1,718 95
Amount transferred from Income account.....	846 80
Contra:—	\$ 17,760 47
Pensions paid to pilots, widows and children.....	2,426 25
Balance at credit of Pilot Fund, December 31, 1913.....	\$ 15,334 22



5 GEORGE V., A. 1915

Receipts.		Expenditures.	
Balance December 31, 1912.....	\$ 2,448 89	Pension Account:—	
25 cent. per foot on outward pilotage..	2,001 93	Pilots.....	\$ 675 00
50 per cent from net pilotage.....	1,718 95	Widows.....	1,751 25
Licenses to 18 pilots .....	90 00	Auditing.....	25 00
"      3 boats... ..	30 00	Rent and salaries .....	1,125 00
Interest on Deposit:—		Stationery.....	25 90
Dominion Savings Bank.....	276 03	Inspecting boats.....	15 00
Bank of Nova Scotia .....	95 69	Legal services.....	11 00
		Telephone.....	54 00
		Light.....	4 73
		Sundries.....	13 70
		Accrued interest, Dominion Savings	
		Bank.....	276 03
		Bank of Nova Scotia .....	95 69
		Balance in Bank of Nova Scotia ....	2,588 39
	\$ 6,661 49 .		\$ 6,661 49

PILOTAGE BOATS.

No. or Name.	Statement of Cost of Maintenance.
No. 1 <i>Howard D. Troop</i> .....	Owned and maintained by the Pilots.
No. 2 <i>James U. Thomas</i> .....	
No. 3 <i>Mina Blanche</i> .....	

Navigation is open all the year round.

J. U. THOMAS,  
*Secretary.*

ST. JOHN, N.B., January 8, 1914.

REPORT OF THE PILOTAGE COMMISSIONERS OF THE PILOTAGE AUTHORITY OF ST. MARY, N.S.  
PILOTAGE COMMISSIONERS.

Names.	When appointed.
Capt. Wm. Murdoch, sr .....	O. C. June 10, 1880.....
Capt. David Douglas .....	O. C. Feb. 7, 1905.....
Capt. C. W. Anderson .....	O. C. Feb. 2, 1907.....
James Heinlow, jr.....	O. C. Feb. 2, 1907.....

The rates of pilotage dues in force in this district are as follows:—

	Inwards.	Outwards.
Vessels of 120 tons to 160 tons .....	\$ 5 00	\$ 7 00
" 160      " 230 .....	6 00	8 00
" 230      " 400 .....	9 00	11 00
" 400      " 500 .....	11 00	13 00
" 500      " 600 .....	14 00	15 00
" 600 tons and upwards \$1.00 for every 100 tons or part thereof.		

This board has not met since the death of the secretary, Wm. Pride. A meeting is called for June 1. The pilots are licensed for three years, and last year there were two old licenses renewed to carry them along until June this year.

C. W. ANDERSON,  
*Acting Secretary.*

SHERBROOKE, N.S.



SESSIONAL PAPER No. 21

REPORT OF THE PILOTAGE COMMISSIONERS OF THE PILOTAGE DISTRICT OF SYDNEY, C.B.

PILOTAGE COMMISSIONERS.

Names.	When appointed.
Vincent Mullins (resigned).....	O.C. May 13, 1912.
Capt. T. Desmond .....	" " 13, 1912.
R. T. J. Voogt.....	" " 13, 1912.
F. C. Kimber .....	" " 13, 1912.
Arch. McKinnon.....	" Aug. 5, 1912.
Chas. P. Livingston.....	" Jan. 20, 1914

STATEMENT of Vessels which paid Pilotage Fees for the year 1913.

Number.	Nationalty.	Tonnage.	Amount paid.
			\$ cts.
577	British steam vessels.....	906,937	23,471 37
32	" sailing vessels.....	6,411	237 50
381	Foreign steam vessels.....	684,537	16,708 50
23	" sailing vessels.....	3,625	161 00
1,013		1,601,510	40,578 37

The rates of pilotage for the time being in force in this District, are as follows:—

	To Sydney.	To North Sydney.
For vessels under 100 tons.....	\$ 6 00	\$ 5 00
From 100 to 150 tons .....	7 00	6 00
" 150 to 200 " .....	8 00	7 00
" 200 to 250 " .....	9 00	8 00
" 250 to 300 " .....	10 00	9 00
" 300 to 350 " .....	11 00	10 00
" 350 to 400 " .....	12 00	11 00

And for every additional 50 tons or fractional part thereof, \$1; for vessels 800 tons and upwards, \$1 for every additional 100 tons or fractional part thereof. Outward pilotage shall be the same as inward. Vessels, upon being hailed by a licensed pilot outside the limits of the port, but within the pilotage district of Sydney, and refusing to, or not taking such pilot, shall pay half pilotage inwards; and upon being offered the services of a licensed pilot before being ready for sea and refusing the services of such pilot, shall be liable to half pilotage outward. Should the services of a pilot so offering be accepted by the master and afterwards declined, then the vessel shall be liable for full pilotage rates; and any pilot placed in charge of a vessel by the master shall be entitled to receive, in addition to full pilotage rates, the sum of two dollars per diem for each day the vessel may be detained while he is waiting on her, through stress of weather or otherwise. And in case a pilot is taken to sea the ship shall be responsible for his expenses unless returned to the port of Sydney. Vessels spoken by a pilot outside of her harbour limits or changing ports between sydney and the ports of Lingan, Glace Bay and Cow Bay, shall only be liable for inward pilotage at the loading port, unless a pilot be employed in changing ports, in which case full tariff rates will be charged. Pilots delivering orders outside of port



limits to vessels to proceed elsewhere shall be entitled to receive full inward pilotage only for such vessels, and pilots prevented from delivering orders after being received by them, by reason of the orders being signalled from light stations shall be entitled to receive full inward pilotage; and if, in any case, another regular pilot belonging to the same port be found in charge the amount of pilotage collected shall be equally divided between the pilot in charge and the pilot delivering orders. Vessels arriving from sea without being spoken inwards by a pilot shall be subject to half pilotage outward unless a pilot be employed, in which case full outward pilotage will be charged, the half pilotage in this case to be paid into the pilotage fund. Vessels calling for orders and remaining outside of harbour limits shall be exempt from outward pilotage unless a pilot be employed.

NAMES of Pilots and Earnings.

Name.	Earnings.
Barrington, Y. H...	\$1,439 52
Brown, Jos...	1,205 82
Burke, T...	1,205 82
Cann, J. ...	1,439 50
Cann, E. P...	1,439 50
Carroll, J. H...	1,111 26
Carroll, John...	1,151 02
Carroll, L...	1,166 04
Curran, M. ...	1,205 80
Fraser, G...	1,205 80
Langille, W...	1,205 79
Ling, L...	1,205 79
McGillvary, James...	1,205 79
McGillvary, John B...	191 91
McGillvary, V...	1,439 49
McInnis, D. A...	1,439 49
McNeil, John...	1,205 80
McNeil, Thos. ...	1,205 80
Mahon, John ...	882 02
Mullins, Bernard...	1,439 52
Mullins, J. T...	1,439 51
Perry, W...	1,439 51
Petrie, E. F...	1,205 81
Petrie, Henry...	1,205 81
Ratchford, H...	1,205 81
Ratchford, T...	1,205 81
Richardson, A. R. ...	1,205 81
Rigby, Peter ...	191 91
Roberts, T...	1,205 81
Rudderham, T. ....	1,205 81
Shanahan, James ...	1,151 03
Young, James P...	313 78
	<hr/>
	\$36,967 89



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NAMES of Apprentice Pilots and Earnings.

Names.	Earnings.
Connel, John.. . . .	\$602 92
McGillvary, Frank .. . . .	719 84
McGillvary, Wm... . . . .	602 92
Morrison, W. D... . . . .	602 91
Petrie, Walter.. . . .	602 91
Young, James P. (now a pilot) .. . . .	440 98
	<hr/>
	\$3,572 48

WHITE FLAG SHIPS licensed during the year.

Br. SS. <i>Louisburg</i> .. . . .	\$100 00
" <i>Cape Breton</i> .. . . .	100 00
" <i>Cacouna</i> .. . . .	100 00
" <i>Coban</i> .. . . .	100 00
" <i>Morwenna</i> .. . . .	100 00
" <i>City of Sydney</i> .. . . .	100 00
" <i>Nevada</i> .. . . .	100 00
" <i>Corunna</i> .. . . .	100 00
" <i>Beatrice</i> .. . . .	100 00
	<hr/>
	\$900 00

STATEMENT of Pension Fund.

Paid Widows Jno. Petrie, Mrs. McInnis, Mrs. I. McGillvary, Mrs. M. Petrie, Mrs. Dan Petrie, Mrs. C. McGillvary, Mrs. A. Ratchford, Mrs. Mary Ann Brown and Mrs. Jane Brown, \$30 each.. . . .	\$270 00
Paid Ex-pilots P. Burke, M. Doyle, W. Ratchford, L. Con- nell, George Townsend and George Fraser, \$50 each ..	300 00
	<hr/>
	\$570 00

RECEIPTS.		EXPENDITURES.	
Balance December 31, 1912 .. . . .	\$ 545 80	Paid Pilots and apprentices.....	\$ 40,540 37
Pilotage receipts.....	40,540 37	" Pensions .....	570 00
Relief.....	38 00	" Collectors.....	850 00
White Flag Licenses.....	900 00	" " office rent.....	100 00
Pilot " " ".....	106 00	" Superintendent.....	250 00
Boat " " ".....	5 00	" W. Fitzgerald, (ex-collector from 1912).....	75 00
Commission.....	2,139 25	" Commissioners.....	775 00
<hr/>		" Miscellaneous expenses.....	29 71
Total.....	\$44,273 42	" Secretary.....	500 00
		" " office rent.....	100 00
		" Cash in Collector's hands.....	326 45
		" balance in bank.....	156 89
		<hr/>	
		Total .....	\$44,273 42

SYDNEY, C.B.,  
March 7, 1914.

F. C. KIMBER,  
Secretary.



5 GEORGE V., A. 1915

REPORT OF THE PILOTAGE COMMISSIONERS OF THE PILOTAGE DISTRICT OF VANCOUVER, B.C.

PILOTAGE COMMISSIONERS.

Name.	When Appointed.
R. H. Alexander .....	O. C. February 3, 1883.
C. G. Major.....	O. C. April 15, 1879.
Frank Burnett.....	O. C. June 20, 1898.
F. W. Evans.....	O. C. February 12, 1912.
H. G. Ross.....	O. C. February 12, 1912.

The rates of pilotatge for the time being in force in this district, are as follows:—  
For vessels entering into or clearing from the ports of Vancouver and Howe sound, the rates of pilotage are as follows:—

- (a) For vessels under sail, \$2 per foot draught of water and 1 cent per net registered ton.
  - (b) For vessels in tow of a steamer, \$1 per foot draught of water and 1 cent per net registered ton.
  - (c) For steamers, \$1 per foot draught of water, and 1 cent per net registered ton.
- The pilotage from Cape Flattery or Royal roads to a line drawn from point Atkinson to the nun buoy on Spanish bank, or to the limits of Howe sound and vice versa, is not compulsory, but if the services of a pilot are required, he shall be paid the following rates, viz.:—

From cape Flattery.. . . .	\$6 00 per foot.
“ Callum.....	5 00 “
“ Beechy head.. . . .	4 00 “
“ Race rocks or Royal roads.. . . .	3 00 “

And for vessels under steam or in tow of a steamer the following rates shall be paid:—

From cape Flattery.....	\$3 00 per foot.
“ Callum bay.. . . .	2 50 “
“ Beechy head.....	2 00 “
“ Race rocks or Royal roads (vessels under steam) . . .	1 00 “
“ Race rocks or Royal roads (vessels in tow of a steamer)	1 50 “

NAMES OF PILOTS AND EARNINGS.

No	Name.	When appointed.	Age	Amount earned.	Amount paid to.
					\$ cts.
1	W. Ettershank .....	June 18, 1888.. . . .	71	Pilots work in one com- pany.. . . .	4,297 42
2	H. Robson Jones.....	July 1, 1892.....	58	.....	4,297 41
3	G. W. Robarts .....	Oct. 1, 1907.....	41	.....	4,297 40
4	R. A. Batchelor.....	May 15, 1910.....	42	.....	3,441 33
5	A. C. Anderson.....	Oct. 16, 1911.....	45	.....	3,797 93
6	A. Christensen .....	Feb. 1, 1912.....	39	.....	3,797 92
7	B. L. Johnson.....	Jan. 29, 1913.....	35	.....	3,112 58
					27,041 99

No white flag ships licensed during the year.



SESSIONAL PAPER No. 21

STATEMENT of Vessels which paid Pilotage during year.

No.	Nationality	Tonnage.	Amount paid.
			\$ cts.
261	British steam vessels.....	1,041,351	20,254 98
19	" sailing vessels.....	35,258	774 08
639	Foreign steam vessels.....	821,756	21,413 55
28	" sailing vessels.....	42,228	990 72
947		1,940,593	\$ 43,433 33

There is a reserve fund in the Bank of Montreal, Savings Branch Department, amounting to \$1,009.25.

RECEIPTS.		EXPENDITURES.	
	\$ cts.		\$ cts.
Balance in Bank, January 1, 1913.....	2,086 26	Paid Pilots, January 1, 1913.....	2,086 26
Pilotage earnings, 1913.....	43,433 33	" during year 1913.....	27,041 89
		Office expense account, 1913.....	1,352 90
		Pilot boats and station expense account, 1913.....	4,375 95
		Pilots' travelling expenses.....	7,672 08
		Balance in Bank.....	2 990 41
	\$45,519 59		\$45,519 59

PILOTAGE BOATS AND STATION.

"Pilot No. 1" (Gas); "C.G.J." (Gas), men's wages, repairs and general running expenses, \$4,375.95.  
Navigation is open all the year round.

RICHARD ALEXANDER,  
Chairman.

C. GARDNER JOHNSON,  
Secretary.

VANCOUVER, B.C., January 2, 1914.

REPORT OF THE PILOTAGE COMMISSIONERS OF THE PILOTAGE DISTRICT OF VICTORIA AND ESQUIMALT, B.C.

PILOTAGE COMMISSIONERS.

Names.	When appointed.	Changes.
H. G. Wilson.....	O. C. Nov. 29, 1912..	
G. A. Kirk.....	" " 29, 1912..	
W. J. Stevens.....	" " 29, 1912..	
J. R. Saunders.....	" Oct. 8, 1913..	Replaced William Grant.
Geo. Okell.....	" " 8, 1913..	" F. A. Pauline.
Joshua Kingham, Secretary.....	" Aug. 26, 1909..	



The rates of pilotage dues for the time being in force in this district, are as follows:—

Vessels bound to other ports and coming to anchor in Royal roads, the pilotage shall be free, except the services of a pilot are employed, when pilotage according to the following graduated scale shall be payable:—

From inside or north of Race rocks to Royal bay, or vice versa, 50 per cent of the prescribed rates under clause (b), section 18. From Beechy road to Royal roads, or vice versa, \$1 per foot.

From Pillar point to Royal roads, or vice versa, \$3 per foot.

From Cape Flattery to Royal roads or vice versa, \$6 per foot draught of water.

For vessels entering into or clearing from the ports of Victoria and Esquimalt, the rates of pilotage shall be as follows:—

(1) For regular ocean steamers, 50 cents per foot draught of water and  $\frac{1}{2}$  cent per net registered ton up to a maximum of 3,500 tons, on the inward voyage, and 50 per cent of the above on the outward voyage subject to a discount of 20 per cent.

(2) For irregular ocean steamers, \$1 per foot draught of water, and  $\frac{3}{4}$  cent per net registered ton.

(3) For regular steamers in the coasting trade between San Francisco and Lynn canal, inclusive, the rates shall be the same as for regular ocean steamers as rated in clause 1.

(4) For vessels under sail, \$2 per foot draught of water and 1 cent per net registered ton.

(5) For sailing in tow, \$1.50 per foot draught of water and 1 cent per net registered ton.

(6) For all vessels entering into or clearing from William Head quarantine station, the rates shall be 50 per cent of the prescribed rates of any class of vessel for Victoria and Esquimalt, subject to exemption in section 17, clause 7; provided, however, that all coasters between San Francisco and Lynn canal inclusive, when compelled by special instructions from the Dominion Government to call at William Head quarantine station, shall be exempt from pilotage dues unless the services of a pilot are requested.

(7) For all vessels of 500 tons and under, 75 cents per foot draught of water.

*Gulf Pilotage.*

For all vessels from the limits of the ports of Victoria and Esquimalt to the limits of all ports on Puget sound and gulf of Georgia, shall be \$1 per foot draught of water.

NAMES of Pilots and Earnings.

Names.	When appointed.	Age.	Amount earned.	Amount paid to.
			\$ cts.	\$ cts.
John Newby.....	1891	65	3,696 77	3,327 16
William Cox.....	1903	58	3,369 02	3,032 16
Charles Israel Harris....	1910	46	4,530 70	4,077 67
William H. Whiteley.....	1911	51	4,186 15	3,767 60
			15,782 64	14,204 59



SESSIONAL PAPER No. 21

STATEMENT of Vessels which paid Pilotage during the year.

No.	Nationality	Tonnage.	Amount paid.
			\$ cts.
183	British steam vessels .....	831,837	6,765 42
1	" sailing " .....	2,139	75 78
330	Foreign steam " .....	698,321	8,550 92
8	" sailing " .....	11,409	390 52
522			\$ 15,782 64

RECEIPTS.		EXPENDITURES.	
	\$ cts.		\$ cts.
British vessels....	6,841 20	Pilots drawing surplus, 1912.....	1,393 26
Foreign " .....	8,941 44	" 1913.....	14,204 59
Surplus, 1912.....	1,393 26	Secretary's salary, 1913.....	600 00
Licenses. ....	1,200 00	Rent and expenses.....	420 00
		Printing.....	33 25
		Miscellaneous Expenses.....	60 90
		Exchange.....	5 58
		Refused payment <i>Glenartney</i> .....	44 82
		Refund to Findlay, Durham & Brodie, S. S. <i>Vestalia</i> .....	26 36
		Surplus ..	1,588 04
	18,375 90		18,375 90

PILOTAGE BOATS.

No. or name.	Statement of cost of maintenance.	—
		\$ cts.
<i>Colby No. 1</i> .. } <i>Colby No. 2</i> ... }	Asper Pilots' monthly log for upkeep of pilots plant.....	3,870 55

Navigation is open all the year round.

J. KINGHAM,  
Secretary.

VICTORIA, B.C., January 21, 1914.



5 GEORGE V., A. 1915

REPORT OF THE PILOTAGE COMMISSIONERS OF THE DISTRICT OF WALLACE, CUMBERLAND  
COUNTY, N.S.

PILOTAGE COMMISSIONERS.

Name.	When Appointed.
Z. A. MacKay.....	O. C. April 30th, 1883.
F. K. Grant.....	O. C. Oct. 6th, 1891.
J. W. Morris .....	O. C. June 11th, 1879.

The rates of pilotage for the time being in force in the District, including the amounts and description of charges upon shipping, are as follows:—

Vessels of	Inward.	Outward.
80 tons and under 160 tons.....	\$ 6 00	\$ 4 00
160 " " 230 " .....	9 00	6 00
230 " " 400 " .....	12 00	8 00
400 tons upward .....	14 00	10 00

On all vessels under 80 tons accepting the services of a pilot, five cents per ton inward and four cents per ton outward. Steamers rated at net tonnage. The above rates are for pilotage to or near the Wallace-Huestis grey stone wharf; up Wynn's channel to the Plaster wharf, or up the Fox harbour channel. Vessels requiring the services of a pilot to Wallace bridge, shall pay twenty-five cents per foot (draught), or if the Wallace freestone quarries or up to the bay of the Abiteau, then the sum of five cents per foot each way additional.

NAMES AND DATES OF APPOINTMENTS OF PILOTS.

Alexander Patten, August, 1898.

Hudson Langille, October, 1892.

- There are no apprentice pilots in this district.
- No white flag ships licensed during the year.
- No vessel entered subject to pilotage during the year.
- Navigation opened about April 15, and closed about December 15.

JOHN W. MORRIS,  
*Secretary.*

WALLACE, N.S., December 31, 1913.



APPENDIX No. 16.

List of live stock shipped from May, 1913 to May, 1914, to ports in Great Britain.

MONTREAL.

Months.		Sheep.	Horses.	Cattle.	Mules.	U.S. Cattle.
May,	1913.....		16	27	.....	
June,	1913.....		4	444	30	
July,	1913.....		1			
August,	1913.....	80	31			
September,	1913.....		35			
October,	1913.....	216	9	17	67	
November,	1913.....		38	24		
		296	134	512	97	

COMPARATIVE STATEMENT of the Number of Cattle shipped from Canada to British ports from the years 1904-5 to 1913-14.

	SHEEP.			CATTLE.			HORSES.			TOTALS.		
	Montreal.	St. John.	Halifax.	Montreal.	St. John.	Halifax.	Montreal.	St. John.	Halifax.	Sheep.	Cattle.	Horses
1913-14...	296	Nil.	Nil.	512	Nil.	Nil.	134	Nil.	Nil.	296	512	134
1912-13...	178	"	"	6,469	"	"	175	"	"	178	6,469	175
1911-12...	3,725	1,798	"	45,866	2,001	"	138	* 14	"	5,523	47,967	152
1910-11..	248	2,508	"	72,555	3,301	"	497	19	"	2,756	75,856	516
1909-10...	1,616	Nil.	"	94,314	4,632	"	286	Nil.	"	1,616	98,946	286
1908-9....	10,111	151	"	99,830	22,923	3,097	116	65	"	10,262	125,850	181
1907-8 ...	11,585	4,168	"	96,977	20,210	Nil.	174	51	"	15,753	127,187	225
1906-7....	10,791	1,371	"	128,160	38,148	"	661	57	"	12,162	159,308	718
1905-6....	19,077	3,971	"	126,871	33,548	1,042	568	79	"	23,048	161,456	647
1904-5....	49,422	17,283	"	108,553	33,833	745	279	213	"	66,715	143,131	492



APPENDIX No. 17.

STATEMENT showing the result of returns of shipping and discharging of seamen, received by the Department of Marine and Fisheries, in accordance with the provisions of Chapter 113, 'An Act respecting Shipping in Canada,' from Shipping Masters throughout the Dominion, for the half year ending June 30, 1912, and December 31, 1913.

NOTE :—The Collector of Customs acts as Shipping Master where no other Shipping Master is appointed.  
QUEBEC.

Name of Port.	Name of County.	Name of Shipping Master.	HALF YEAR ENDING JUNE 30, 1913.			HALF YEAR ENDING DEC. 31, 1913.			TOTAL.		
			Seamen Shipped.	Seamen Discharged.	Amount. \$ cts.	Seaman Shipped.	Seamen Discharged.	Amount. \$ cts.	Seamen Shipped.	Seamen Discharged.	Amount. \$ cts.
Escoumains .....	Saguenay .....	C. J. Belanger.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Gaspé.....	Gaspé.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Montreal .....	Hochelega.....	R. S. White .....	263	705	343 00	936	910	741 00	11 99	1,615	1,084 00
Magdalen Islands.	Gaspé .....	Camille Delaney..	.....	.....	.....	.....	.....	.....	.....	.....	.....
Quebec .....	Quebec.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Rimouski .....	Rimouski .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
St. Johns.....	St. Johns.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Three Rivers....	Three Rivers..	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
									11 99	1,515	1,084 00

NEW BRUNSWICK.

Alma.....	Albert.....	.....	2	.....	2 80	.....	1	.....	3	.....	.....
Amherst.....	Cumberland.....	B. W. Balser.....	.....	6	.....	.....	.....	1 40	.....	9	4 20
Bathurst.....	Gloucester.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Chatham .....	Northumberland .....	R. J. Walls. ....	13	14	12 70	17	16	13 30	30	30	26 00
Dalhousie.....	Restigouche .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Dorchester.....	Westmorland. ....	W. D. Wilbur....	3	8	3 90	.....	.....	.....	3	8	3 90
Fredericton.....	" .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Grand Harbour..	Charlotte.....	D. I. W. McLaughlin.	.....	.....	.....	.....	.....	.....	.....	.....	.....
Harvey .....	Albert.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Hillsborough.....	" .....	L. J. Steeves.....	4	4	3 20	5	2	3 10	9	6	6 30
Lepreau.....	Charlotte.....	J. E. Haggerty ..	.....	.....	.....	.....	.....	.....	.....	.....	.....
Musquash.....	St. John.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
New Brandon ..	Gloucester.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Newcastle.....	Northumberland ..	John Russell.....	10	5	6 50	8	9	6 70	18	14	13 20



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[illegible]

NOVA SCOTIA.

Advocate Harbour	Cumberland	E. C. Moore	4	5	3 50	13	8	8 90	17	13	12 40
Amherst	Cumberland	B. W. Balser	2	6	2 80	1	3	1 40	3	9	4 20
Annapolis	Annapolis										
Antigonish	Antigonish										
Apple River	Cumberland										
Arichat	Richmond	A. F. Boudrot	5	2	3 10	1	9	3 20	6	11	6 30
Baddeck	Victoria										
Barrington	Shelburne	D. Sargent	4		2 00	3	5	3 00	7	5	5 00
Barton	Digby	F. W. Hutchison	37	13	22 40	41	33	31 40	78	46	53 80
Bayfield	Antigonish										
Belliveau Cove	Digby	E. E. Theriault	28	14	18 20	26	24	20 20	54	38	38 40
Bear Harbour	Halifax										
Bear River	Digby	W. W. Wade	13	27	17 10	25	36	23 30	38	63	40 40
Bridgewater	Lunenburg	R. L. McLatchy	30	11	18 30	69	64	53 70	99	75	72 00
Canning	Kings										
Canso	Guysborough	P. C. Cullen	33	3	17 40	15	6	9 30	48	9	26 70
Church Point	Digby	Philip A. Saulnier				6	5	3 90	6	5	3 90
Clark Harbour	Annapolis	Ephraim Nickerson	3	3	2 40	2	5	3 50	5	8	5 90
Clementsport	Annapolis	W. C. Jones	16	16	12 80	30	28	23 40	46	44	36 20
Cheverie	Hants	Nelson Brady									
Descousse	Richmond	Felix Landry (act.)	5		2 50		6	1 80	5	6	4 30
Digby	Digby	A. M. Gidney				47	45	37 00	47	45	37 00
Guysborough	Guysborough	H. M. Scott				4	7	4 00	4	7	4 00
Halifax	Halifax	Howard Bligh	1,871	1,524	1,392 70	1,990	1,902	1,565 60	3,861	3,426	2,958 30
Hastings	Inverness										
Hantsport	Hants	J. W. Lawrence	4		2 00	9	5	6 00	13	5	8 00
Harbour au Bouche	Annapolis										
Jordan Bay	Shelburne	E. Lyle Martin									
*Labave	Lunenburg	William Maschke	15	72	41 10	104	56	68 80	119	128	109 90
Liscomb	Guysborough	William Hemlon	14	6	8 80	7	12	7 10	21	18	15 90

\*18 fishing crews at \$2.50 each crew.



STATEMENT showing the result of returns of shipping and discharging of seamen, &c.—Continued.  
NOVA SCOTIA—Concluded.

Name of Port.	Name of County.	Name of Shipping Master.	HALF YEAR ENDING JUNE, 1913.			HALF YEAR ENDING DEC. 1913.			TOTAL.		
			Seamen Shipped.	Seamen Discharged.	Amount. \$ cts.	Seamen Shipped.	Seamen Discharged.	Amount. \$ cts.	Seamen Shipped.	Seamen Discharged.	Amount. \$ cts.
Liverpool.....	Queens.....	W. G. Hemeon....	76	38	49 40	46	45	36 50	122	83	85 90
Lockeport.....	Shelburne.....	J. R. Ruggles....	1	.....	0 50	31	20	21 50	32	20	22 00
Londonderry.....	Colchester.....	J. A. Blaikie....	Nil.	.....	.....	.....	.....	.....	.....	.....	.....
Lunenburg.....	Lunenburg.....	William Shupe....	156	176	130 80	265	160	180 50	421	336	311 30
Louisburg.....	Cape Breton.....	Arthur Townsend..	134	160	115 00	118	153	104 90	252	313	219 90
*Mahone Bay....	Lunenburg.....	J. Enoch Mason...	48	62	62 60	71	35	46 00	119	97	108 60
Main-à-Dieu.....	Cape Breton.....	Rankin McDougall	1	1	0 80	3	3	2 40	4	4	3 20
Maitland.....	Hants.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Margaree.....	Inverness.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Margaretsville.....	Annapolis.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Merigonish.....	Pictou.....	T. B. Olding.....	Nil.	.....	.....	Nil.	.....	.....	.....	.....	.....
Meteghan.....	Digby.....	L. T. Melanson...	9	7	6 60	7	8	6 60	16	15	12 20
Mulgrave.....	Guysborough.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
New Campbellton..	Victoria.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
North East Harbo'r	Shelburne.....	M. J. Ross.....	412	172	257 60	510	192	312 60	922	364	570 20
North Sydney.....	Cape Breton.....	E. Woodworth....	82	70	62 00	63	52	47 10	145	122	109 10
Parrsboro.....	Cumberland.....	John Waters.....	71	17	40 60	48	52	39 60	119	69	80 20
Pictou.....	Pictou.....	H. G. Pettis.....	13	17	13 30	39	34	33 10	52	51	46 40
Port Gravelle.....	Guysborough.....	James McLean....	1	2	1 00	6	4	4 20	7	6	5 20
Port Hawkesbury..	Inverness.....	George L. McLean..	5	2	3 10	13	8	8 90	18	10	12 00
Port Hastings.....	Inverness.....	E. Mc. D. Tremain	Nil.	.....	.....	.....	.....	.....	.....	.....	.....
Port Hood.....	Inverness.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Port Lorne.....	Annapolis.....	M. J. Keating.....	15	14	11 70	15	15	12 00	30	29	23 70
Port Mulgrave.....	Guysborough.....	Benj. R. Smith....	Nil.	.....	.....	.....	.....	.....	.....	.....	.....
Port la Tour.....	Shelburne.....	T. Sabean.....	"	.....	.....	.....	.....	.....	.....	.....	.....
Port Medway.....	Queens.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Port Morien.....	Cape Breton.....	J. R. Starr.....	Nil.	.....	.....	.....	1	0 30	.....	1	0 30
Port Williams.....	Kings.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Port Wade.....	Annapolis.....	J. L. Belleveau..	Nil.	.....	.....	.....	.....	.....	.....	.....	.....
Pubnico.....	Yarmouth.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Pugwash.....	Cumberland.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
River Hebert.....	Cumberland.....	J. F. Moffatt.....	4	1	2 30	4	.....	4 00	8	1	4 30
Riverport.....	Lunenburg.....	Stephen Ritcey....	8	15	8 50	8	15	8 50	16	30	17 00
St. Anns.....	Victoria.....	B. R. Smith (actg)	Nil	.....	.....	Nil	.....	.....	.....	.....	.....
St. Peters.....	Richmond.....	A. W. Morrison...	34	.....	17 00	37	.....	18 50	71	.....	35 50
Salmon River.....	Digby.....	T. P. Deveau.....	5	.....	2 50	5	5	4 00	10	5	6 50



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Sheet Harbour	Halifax	O. P. Fraser	Nil	6	1 80	3	1 50	3	6	3 30
Shelburne	Shelburne	W. W. Alwood	11	4	6 70	10	6 80	21	10	13 50
Spencer Island	Cumberland	Geo. D. Spicer	164	122	118 60	334	253 10	49 8	409	371 70
Sydney	Sydney	James Ruderham								
Thorne Cove	Annapolis									
Truro	Colchester	James Ramsay	Nil							
Tatamagouche	"	Howard Woclaver								
Wallace	Cumberland									
Walton	Hants					8	5 80	8	6	5 80
West Arichat	Richmond									
Weymouth	Digby	A. H. Brooks	25	16	17 30	45	35 70	70	60	53 00
Windsor	Hants	A. H. Spence	20	22	16 60	26	20 50	46	47	37 10
Wolfville	Kings	C. R. Bill	Nil							
Yarmouth	Yarmouth	T. E. Messenger	427	282	298 10	446	354 70	873	721	652 80
								8,360	6,776	6,253 30

PRINCE EDWARD ISLAND.

Alberton	Prince	F. Beers	113	12	60 10	210	132 00	323	102	192 10
Charlottetown	Queens	Neil Waddell	Nil			4	1 20	4	1	1 20
Crapaud	"	F. E. Morrisey	28		14 00	Nil		28		14 00
Georgetown	Prince									
Malpeque	Queens	H. J. Brehaut	Nil	Nil		Nil				
Murray Harbour	Kings	E. Parkman	"	"		"				
Montague	Queens									
Pinette	Prince									
Port Hill	Kings	Chas. Wayne	Nil	6	4 80	12	7 80	18	12	12 60
St. Peters	"	Arch. C. Currie	6							
Souris	Prince									
Summerside	"									
Tignish										
								373	115	219 90

BRITISH COLUMBIA.

Abbotsford	Vancouver	John Grice	Nil							
Clayoquot	Comox-Atlin									
Hesquait	Vancouver	Amos Ellis	5	3	3 40	7	4 10	12	5	7 50
Kynoquot	Comox	Chas. Harrison	Nil	Nil		Nil				
Masset	Comox-Atlin	E. M. Oskrie	254	107	179 10	261	245 30	515	448	424 40
Prince Rupert	New Westminster	M. M. Matheson	16	2	4 30	4	2 05	20	9	6 35
New Westminster	Victoria	Geo. Kirkendale	1,318	1,002	959 60	916	718 70	2,234	1,871	1,678 30
Victoria	New Westminster	J. B. Campbell	1,036	945	944 90	1,200	1,116 00	2,236	2,132	2,060 90
Vancouver								5,017	4,465	4,177 45



## APPENDIX No. 18.

## REPORTS OF SUBSIDIZED WRECKING COMPANIES.

## REPORT OF THE QUEBEC SALVAGE AND WRECKING COMPANY.

The entire plant has been held available for services from the opening to the close of navigation on the St. Lawrence river during the above mentioned period with a complete staff of wreckers and divers. Following operations have been performed:—

1912.

May 24. SS. *Ultonia* assisted vessel from Quebec to below the traverse.

September 25. Barge *Zapotec* sunk at Bersimis, floated her and brought her to Quebec.

October 6. SS. *Bengore Head* went to assistance and stood by her from Strait of Belle Isle to Quebec.

October 19. Barge *Omaha*, towed her off from Bersimis.

October 31. SS. *Bellona* sunk at Lower Traverse, floated her and brought her to Quebec.

November 6. SS. *Royal George* ashore at St. Lawrence point, supplied her with pumps, pulled her off and brought her to Quebec.

November 10. SS. *Gladstone* ashore at St. Lawrence point, supplied her with pumps, pulled her off and brought her to Quebec.

1913.

May 31. SS. *Floriston* sunk at Pointe Platon, supplied her with pumps, lifted her and brought her to Quebec.

June 24. SS. *Cruizer* sunk at St. Catharine's bay, floated her and brought her to Quebec.

July 29. SS. *Lady of Gaspé* sunk off Cap de la Madeleine, patched up hole 9 by 20 feet under water, lifted her and brought her to Quebec.

September 16. SS. *Whakatane*. This ship ran into Gilmour's wharf where she landed with her foreship, towed her off and brought her to Quebec.

October 16. SS. *Empress of Ireland*, rendered diver's services clearing propeller.

## SALVAGE SERVICES RENDERED BY DOMINION COAL COMPANY IN MARITIME PROVINCES.

NOTE.—Received too late for the Deputy Minister's report.

January 14, 1914. Newspapers reported R.M.S. *Cobequid* with about 150 passengers ashore on Trinity ledges, bay of Fundy. Despatched tug *Springhill* from St. John immediately to scene to take passengers off and render all possible assistance to steamer. Before tug reached scene, passengers had been rescued by other steamers and *Cobequid* declared to be a total loss.

January 25, 1914. Steamer *Astarte* parted her moorings in Louisburg harbour during a heavy southerly gale and drifted ashore. Despatched tug *C. M. Wince* to her assistance, but help was declined by the *Astarte*. Tug, however, stood by until steamer succeeded in getting off without assistance.

February 24, 1914. Ordered ss. *Morwenna* while on voyage from Halifax to New York to look out for ss. *Lingan*, which was then five days overdue at Louisburg on passage from Boston. On February 26, *Morwenna* picked up *Lingan* 100 miles south-east of cape Cod in a helpless condition with propeller gone and in grave danger of drifting ashore. *Morwenna* with great difficulty towed the disabled steamer into Boston harbour and anchored her in a place of safety.



## SESSIONAL PAPER No. 21

March 5, 1914. Steamer *Easington* was reported as being caught in heavy drift ice near Guyon island, with propeller broken, short of fuel, provisions and fresh water. Despite the presence of heavy floating ice the tug *Douglas H. Thomas* was sent from Louisburg during a heavy snowstorm to rescue the crew and save steamer if possible. The tug reached disabled steamer and with great difficulty, as well as grave danger to herself, succeeded in towing steamer through the heavy ice to within four miles of Louisburg, where an enormous quantity of ice was encountered and no further progress could be made. Tug, however, stood by all night and during part of the following day, or until the Government ice-breaking steamer *Stanley* came along and cleared a passage through the drift-ice, after which all three vessels reached port.

March 10, 1914. Eight Government employees walked on closely packed ice out to buoy in Louisburg harbour to make repairs. While engaged in making the repairs the ice moved off with the outgoing tide. The ss. *Louisburg* was sent from her berth at Louisburg pier and rescued them.

March 15, 1914. SS. *Cape Breton* transferred nine tons of bunker coal to the ss. *Seal*, which was caught by drift ice ten miles west of Louisburg completely out of fuel, thus enabling the *Seal* to reach port safely.

March 17, 1914. SS. *City of Sydney* struck Sambro ledges during a dense fog. Sent ss. *Cabot* from Halifax and tug *Douglas H. Thomas* to her assistance. Steamer, however, was found to be full of water fore and aft and became a total loss. The ss. *Cabot* salvaged a portion of her cargo and landed it at Halifax.

## REPORT OF BRITISH COLUMBIA SALVAGE COMPANY.

*Report of Operations SS. "Salvor," January 14, 1914, to November 30, 1914.*

January 26-28. Attending ss. *Princess Sophia*, ashore Blinkinsop bay, Johnson sts., B.C., and delivering her safely at Esquimalt.

August 19-October 5. To working at ss. *Prince Albert*, ashore on Tree Knob group, and delivering her safely at Esquimalt.

October 15-20. Convoying ss. *Prince Albert* from Esquimalt to Vancouver.



